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GUIDANCE MANUAL FOR PREPARATION OF NAVY SHORE INSTALLATION POLLUTION PREVENTION PLAN UPDATES

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13. ABSTRACT (Maximum 200 words)

All Navy shore installations are required to develop, implement, and update Pollution Prevention (P2) Plans. The purpose of this guidance manual is to provide Navy personnel with a reference document to assist them in updating P2 Plans at their installations. The guidance document has been prepared to communicate lessons learned from review of existing installation P2 Plans and to provide a recommended standardization format to Navy installations for updating their P2 Plans. It also provides general recommendations for required annual review of their P2 Plans.

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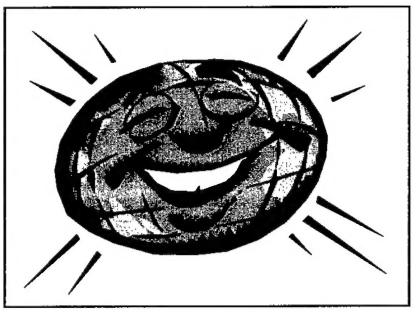
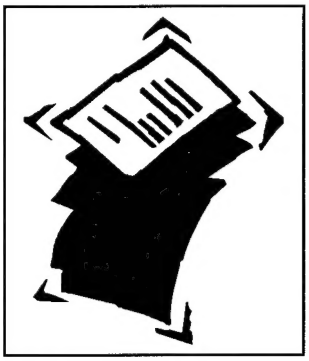
INTRODUCTION

Pollution prevention (P2) involves using methods and programs designed to reduce or eliminate pollution at the source instead of trying to control or mitigate the effects. Pollution prevention includes conserving energy, water and natural resources; eliminating or reducing pollution at the source; reducing the use of hazardous materials; and recycling. Pollution prevention provides the Navy with an important tool for complying with regulatory requirements and managing its resources more efficiently and cost-effectively. All Navy shore installations are required to develop, implement and update P2 Plans to achieve those objectives. The purpose of this guide is to provide Navy personnel with a reference document to assist them in updating existing pollution prevention plans at their installations. This guidance document also provides some general recommendations for the required review of P2 Plans.



The primary drivers for P2 programs at Navy installations are Executive Orders (EO) 13101 and 13148, State and local laws, and, in foreign nations, Environmental Final Governing Standards. In particular, EO 13148, which superseded EO 12856, directs all Federal agencies to comply with the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA) and the Pollution Prevention Act of 1990 (PPA), establishes new EPCRA TRI release reduction goals, and establishes a new hazardous chemical use reduction program. Executive Order 13148 states that "by 31 March 2002 each agency shall ensure that its facilities develop a written plan that sets forth the facilities' contribution to the goals and requirements established in the EO." Further, EO 13148 encourages facilities not specified in Section 902 of the Order to make best efforts to comply with the EO goals. In the case of facilities that already have formal environmental planning, EO 13148 encourages facilities to update their P2 Plans to reflect the new requirements and goals. It promotes the use of pollution prevention to achieve and maintain environmental compliance at Federal agency facilities. The EO supports the environmental management system (EMS) process and requires by 31 December 2005 each agency to implement an EMS at all appropriate facilities. One additional requirement set forth by EO 13148 is for environmentally and economically beneficial landscaping to reduce adverse effects on the natural environment.



The PPA establishes an environmental management hierarchy as national policy. This hierarchy, also incorporated into EO requirements, calls for the following.

⌘	Pollution is to be prevented or reduced at the source whenever possible.
⌘	Pollution that cannot be prevented is to be recycled in an environmentally safe manner whenever feasible.
⌘	Pollution that cannot be prevented or recycled is to be treated in an environmentally safe manner whenever feasible.
⌘	Disposal or other release into the environment is to be employed only as a last resort and conducted in an environmentally safe manner.

OPNAVINST 5090.1B, issued by the Office of the Chief of Naval Operations (CNO), establishes P2 policies and procedures for Navy shore installations, including direction for compliance with EO 13101 and EO 12856 (now superceded by EO 13148). Compliance direction for EO 13148 will be addressed in forthcoming changes to OPNAVINST 5090. The Navy's Environmental Quality Initiative (EQI) supports Navy commands and activities to develop and implement P2 programs for the support of direct pollution prevention and as a means to address environmental compliance. As part of its P2 program, each activity must develop and implement a P2 Plan that will reduce pollution from all sources and to all media as well as meet the requirements of the Executive Orders.

P2 PLANS AND P2 PLAN UPDATES

Guidance for development of activity P2 Plans was previously provided in OPNAV P45 120 10 94 – Navy Shore Installation Pollution Prevention Planning Guide. Per CNO direction, all Navy shore installations were required to develop their P2 Plans by December 1995 and forward a copy of the plan to the Naval Facilities Engineering Service Center (NFESC) in Port Hueneme, California. A Navy-wide review of activity P2 Plans revealed a lack of standardization in both content and depth of information presented. Nearly all P2 Plans focused exclusively on hazardous/toxic materials and hazardous waste management and did not consider regulatory compliance benefits when evaluating P2 opportunities. Having this information allowed the Navy to develop a strategy for updating P2 Plans and implementing identified P2 opportunities. In particular, Navy policy emphasizes the innovative, aggressive use of P2 measures to achieve full and sustained compliance with environmental regulations. Specific recommendations for P2 Plan updates include the following.

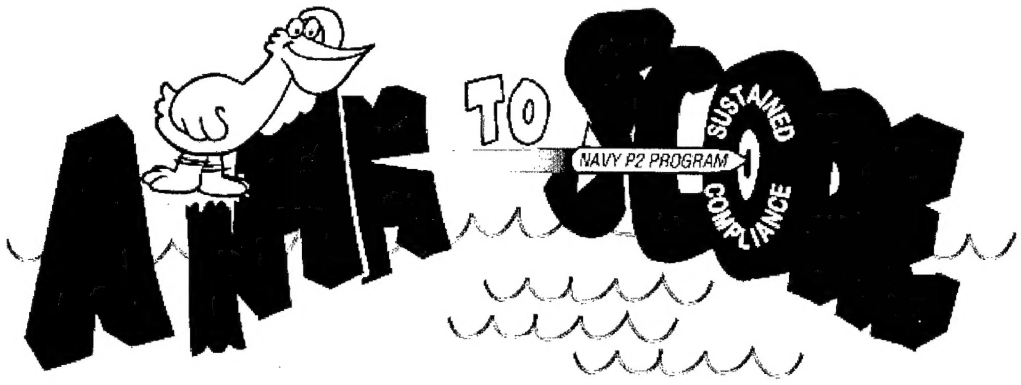
⌘ Activities should include the impacts of regulatory compliance requirements when determining potential P2 opportunities.
⌘ Activities should consider the impacts of pollutant releases on all media areas when performing process evaluations.
⌘ Activities should present a summary list of P2 projects that have been implemented at the installation or rejected.
⌘ Activities should include all information necessary for implementation when presenting recommended P2 opportunities.

P2 PLAN REVIEWS

Activities are required to review their P2 Plans on at least an annual basis. The objective of this review is to ensure that all P2 opportunities identified for implementation are proceeding as planned and that progress toward meeting P2 goals is being made. Specifically, preparing a summary of the status of completed, ongoing, and upcoming projects as well as any significant changes in the overall scope of the program is recommended during the annual review. This annual summary should be placed with the P2 Plan and then incorporated in the next update of the installation's P2 Plan.

THE NAVY ENVIRONMENTAL QUALITY INITIATIVE

The Navy's Environmental Quality Initiative (EQI) is a comprehensive initiative focused on maximizing the use of P2 methods to achieve and maintain compliance with environmental regulations. The EQI is a fundamental part of the Navy's environmental strategy, called AIMM to SCORE – Assess, Implement, Manage and Measure to achieve Sustained Compliance and Operational Readiness resulting in Environmental Excellence. While pollution prevention and compliance have traditionally been managed as separate pillars of the Navy environmental program, the EQI encourages activities to apply P2 methods to meet environmental compliance requirements. Consistent with the goals and objectives of the EQI, the Navy views compliance and pollution prevention as complementary programs in a comprehensive environmental quality effort. By maximizing the use of P2 methods to achieve environmental excellence, the Navy will maintain operational readiness and regulatory compliance at the lowest life-cycle cost. Guidance for implementing EQI at Navy installations can be found in the Office of the Chief of Naval Operations (CNO N45) document, *A Guide to the Navy's Environmental Quality Initiative – Using Pollution Prevention to Achieve Environmental Excellence.*



P2 Plan Update Guidance

This guidance document has been prepared to communicate lessons learned from review of installation P2 Plans and to provide a recommended standardized format to Navy installations for updating their P2 Plans. Activity personnel can also use this document to answer the following questions.

⌘ How do I identify new P2 opportunities for my operations and processes?
⌘ What factors do I need to consider in determining which P2 opportunity is best?
⌘ What factors do I need to consider when implementing my P2 opportunities?
⌘ What resources are available to help me?

This document is also a tool for reviewing and updating an existing P2 Plan. The document is organized into three main sections.

- **Section 1** provides the policy background and Navy requirements for establishing P2 Programs, reviewing a P2 Plan, and developing P2 Plan updates. It also presents Department of Defense and Navy goals for pollution prevention and waste reduction.

- **Section 2** provides an overview of the expected scope of an installation's P2 Program and details the content of an installation's P2 Plan Update.

- **Section 3** provides guidance for the analysis and evaluation of P2 options.

Other supporting information and samples of P2 Plan elements are contained in the appendices of this report.

Section 1

POLLUTION PREVENTION (P2) REQUIREMENTS AND GOALS

OPNAVINST 5090.1B establishes the P2 policies and procedures for the Navy, including the requirements of Executive Orders (EO) 13101 and 13148. EO 13148 requires each Federal agency facility, by 31 March 2002, to develop a written plan that "sets forth the facility's contribution" to the goals and requirements established in the order. The EO indicates that existing P2 Plans may be modified to satisfy this requirement. OPNAVINST 5090.1B mandates that all shore installations prepare and implement a P2 Plan. Navy installations shall update their existing P2 Plans to ensure they continue to meet applicable requirements. Additional goals and requirements for waste reduction and pollution prevention established by EOs 13101 and 13148 that relate to Navy installations are outlined below.

Navy shore installations should promote the use of P2 to achieve and maintain environmental compliance at their facilities.

EO 13101 Goals	EO 13148 Goals
• Incorporate waste prevention and recycling in daily operations.	• Develop Environmental Management Systems (EMS).
• Increase the purchase and use of environmentally preferable products.	• Use P2 to achieve and maintain environmental compliance.
• Integrate P2 and affirmative procurement into acquisition programs.	• Ensure that Federal facilities are leaders and responsible members to the community under EPCRA.
• Establish goals for solid waste diversion in the near term as well as long-range diversion goals.	• Continue to reduce the release of toxic chemicals.
	• Reduce the use of toxic and hazardous substances.
	• Continue to reduce the use of ozone-depleting chemicals.
	• Use environmentally and economically beneficial landscaping to reduce adverse effects on the natural environment.

1.1 NAVY ENVIRONMENTAL QUALITY INITIATIVE

The Navy's Environmental Quality Initiative (EQI) is a comprehensive initiative focused on maximizing the use of pollution prevention to achieve and maintain compliance with environmental regulations. Although the EQI does not impose any specific quantitative requirements on Navy installations, the stated goal of the initiative is to "achieve sustained compliance at the lowest life-cycle cost." The EQI refocuses P2 efforts to achieve the following objectives.

• Reduce the life-cycle cost of the Navy's environmental quality program.
• Achieve sustained environmental compliance at Navy activities.
• Reduce generation of pollutants at Navy activities.
• Increase use of P2 alternatives to meet environmental compliance requirements.
• Assess and communicate the return on P2 investments.

Traditionally, P2 and compliance have been managed as separate pillars of the Navy's environmental program. The purpose of the EQI is to ensure that Navy activities use P2 as the preferred method to achieve and sustain compliance with environmental regulations. By using the EQI approach, Navy activities will attain environmental excellence and reduce the cost of environmental compliance by using P2 methods to achieve and maintain compliance with regulatory requirements. The goal of EQI is not to establish specific quantitative requirements, but rather to establish a process for identifying and implementing the lowest cost alternatives for achieving compliance. Environmental quality planning efforts at Navy installations should integrate pollution prevention and compliance assets to focus on achieving full and sustained compliance at the lowest feasible life-cycle cost. The EQI process elements are defined and described in the Office of the Chief of Naval Operations (CNO N45) document, *A Guide to the Navy's Environmental Quality Initiative – Using Pollution Prevention to Achieve Environmental Excellence*.

1.2 REQUIREMENTS FOR POLLUTION PREVENTION PLANS

EO 13148 requires that by 31 March 2002 each agency shall ensure that all of its facilities develop a written plan that sets forth the facility's contribution to the goals and requirements of the EO. All Navy installations already have written P2 Plans per OPNAVINST 5090.1B. They are now required to update those plans to incorporate the new requirements outlined in the EO.

All Navy shore installations have previously been required to develop their P2 Plans by December 1995 and forward a copy of the Plan to the Naval Facilities Engineering Service Center (NFESC Code 423) in Port Hueneme, California. Current policy directives from CNO N45 require installations to review their P2 Plan annually and update their P2 Plan every 3 years. (For purposes of this guidance document, an update of the P2 Plan shall be identical to a revision, as defined in OPNAVINST 5090.1B.) When reviewing and updating (or revising) their P2 Plans, activities should identify existing or completed P2 efforts and programs, perform an assessment to identify additional P2 opportunities, and identify a Plan of Actions and Milestones (POA&M) to implement these P2 opportunities. In installation P2 Plan updates, activities are encouraged to broaden their focus to integrate sustained compliance through source reduction and reduced toxic releases, while minimizing life-cycle cost. When the P2 Plan is updated, it should also be forwarded to NFESC Code 423. The P2 Plan Update will supercede the existing P2 Plan, so the installation should reference the previous P2 Plan and identify when it was published. The methodology to be used to conduct the update assessment is described in the following sections of this guidance document, and must include the new requirements set out in EO 13101 and EO 13148.

In addition to the above, Navy installations may also have to comply with State and local P2 requirements. A State or locality may require P2 planning to be part of a larger, more encompassing environmental management system (EMS) plan. If an installation has prepared such an EMS plan that also fulfills EO and OPNAVINST 5090.1B requirements, then a separate "Navy P2 Plan" is not required. Information in this guidance document can be used to update the P2 elements in any environmental planning document.

1.3 DEPARTMENT OF DEFENSE POLLUTION REDUCTION GOALS

The Defense Environmental Security Council (DESC) developed measure of merit (MOM) goals for all environmental functional areas. The Deputy Under Secretary of Defense for Environmental Security (DUSD(ES)) requires that the MOM goals for pollution prevention be adopted at Department of Defense (DOD) installations.

MOM goals provided Navy facilities with a baseline for their reduction efforts. By establishing aggressive P2 programs, Navy installations have made significant progress toward achieving those goals. The 1998 DOD MOM data indicated that the Navy had already achieved a 68% reduction in releases documented in Toxics Release Inventory (TRI) reports. Navy hazardous waste disposal decreased 45% and solid waste disposal decreased 20% from the calendar year (CY) 1992 baseline. In CY 1998, the Navy decreased the amount of hazardous waste sent off-site by 62% compared to the CY 1992 baseline – exceeding the targeted 50% goal. In addition, Navy activities diverted over 39% of their solid waste stream in CY 1998 to qualified recycling programs. Based on these accomplishments, the following revised MOM goal has been developed for non-hazardous solid waste.

By the end of FY 2005, ensure the diversion rate for non-hazardous solid waste is greater than 40%, while ensuring integrated non-hazardous solid waste management programs provide an economic benefit compared with disposal using landfilling and incineration alone.

EO 13101 further requires that Federal agencies prevent pollution wherever feasible and incorporate waste prevention and recycling into daily operations. The EO also requires Federal agencies to implement the following measures.

• Increase the procurement of environmentally preferable items.
• Expand existing affirmative procurement and recycling programs.
• Integrate P2 and affirmative procurement into acquisition programs.
• Establish goals for solid waste prevention and recycling or diversion.

EO 13148 reiterates the P2 requirements of superceded EO 12856 and establishes additional reduction goals. It emphasizes pollution prevention as a means to address environmental compliance and requires Federal agencies to establish the following environmental management goals.

• Reduce reported TRI releases and off-site transfers of toxic chemicals for treatment and disposal by 10% annually, or by 40% overall by 31 December 2006.
• Reduce the use of selected toxic chemicals, hazardous substances, and pollutants, for a specific use by 50% by 31 December 2006.
• Develop a plan to phase out the procurement of Class I ozone-depleting substances for all nonexempted uses by 31 December 2010.
• Establish and implement environmental compliance audit programs and policies that emphasize pollution prevention as a means to both achieve and maintain environmental compliance and advance the national policy that, whenever feasible and cost-effective, pollution should be prevented or reduced at the source.
• Promote the sustainable management of facility lands by implementing cost-effective, environmentally sound landscaping practices and programs to reduce adverse effects on the natural environment.

At the time of publication of this guidance document, DUSD(ES) was updating the MOM goals in accordance with the new EOs. For the latest status of revisions to Pollution Prevention and Compliance metrics, refer to the DENIX web page at https://www.denix.osd.mil/denix/DOD/Working/Metrics/p2-cmmetrics.html.

1.4 NAVY POLLUTION REDUCTION GOALS

All Navy installations must prepare a P2 Plan as required by OPNAVINST 5090.1B. The P2 Plan should identify reduction goals and outline mechanisms implemented for meeting the goals. The goals developed by a facility will depend on the size and functions of the installation, compliance requirements, data availability, progress already made, and the anticipated cost-effectiveness of further reductions. The actions that an installation can undertake to achieve its P2 goals may be managerial or planned process-specific improvements. Once P2 initiatives have been implemented, metrics should be developed and tracked to determine the impact of a P2 action on a P2 goal. For example, if the P2 goal is to reduce air emissions by 50% and the P2 measure is to install high volume, low pressure (HVLP) paint spray guns, then the metric would be the amount of volatile organic compound (VOC) emissions that were avoided by using HVLP guns.

In addition to the EO requirements and MOM goals cited above, OPNAVINST 5090.1B also requires Navy shore installations to adopt the following hazardous material management practices to control the quantity of hazardous material procured, stored, and used.

• Develop an Authorized Use List (AUL) for each activity.
• Institute a Consolidated Hazardous Material Reutilization and Inventory Management Program (CHRIMP).

A strategy for implementing a hazardous material tracking system should also be included in the P2 Plan Update.

Additional guidance on defining installation P2 goals and objectives can be found in CNO document, *A Guide to the Navy's Environmental Quality Initiative – Using Pollution Prevention to Achieve Environmental Excellence*, in the section titled "Developing Metrics – Redefining Program Goals and Objectives."

Section
2

DEVELOPING POLLUTION PREVENTION PLAN UPDATES

An installation's P2 Plan defines the structure of its P2 Program, explains how the P2 Program goals will be met, and documents completed P2 initiatives. This section discusses the structure of the installation's P2 Program and provides a description of elements to be included when updating installation P2 Plans. Example elements from a model P2 Plan Update are shown in Appendix A.

Navy shore installations should use their P2 Plans as a tool and not simply view the plan as a compliance requirement.

2.1 POLLUTION PREVENTION PLAN ANNUAL REVIEWS

Before moving directly to P2 Plan updates, this section begins with a short discussion on the P2 Plan review. Activities are required to review their P2 Plans on at least an annual basis. The objective of this review is to ensure that all P2 actions identified for implementation are proceeding as planned and that progress toward meeting P2 goals is being made. In conducting annual P2 Plan reviews, activities should use the following as a checklist to identify and document P2 Plan implementation actions.

❑ Progress on or results of actions for P2 opportunities identified in the plan.
❑ Changes to implementation schedules for actions or P2 opportunities that have not been completed as originally planned.
❑ Significant changes in activity mission, function, operations, or personnel.
❑ Changes to regulatory compliance requirements.
❑ Changes in activity priorities.

The annual P2 Plan reviews should be accomplished by base personnel (such as the base environmental or P2 coordinator), if feasible. Results of the annual review can be documented informally by marking up the existing P2 Plan or by adding a short review section. The changes and documentation made during this review should be included in the P2 Plan Update.

2.2 POLLUTION PREVENTION PLAN UPDATES

All Navy shore installations were required to develop a P2 Plan by December 1995 and forward a copy of the Plan to the Naval Facilities Engineering Service Center in Port Hueneme, California. Current CNO policy requires installations to update their P2 Plans every 3 years and conduct P2 Plan reviews annually. (The policy revision was formally issued in CNO N451 letter, Ser. N451D/8U589014 dated 28 Sep 1998 and incorporated into revisions of OPNAVINST 5090.1B.) In the front of the P2 Plan Update, for example in the Executive Summary, each installation should reference their existing P2 Plan and identify when it was written. The P2 Plan Update serves as a transition from the baseline P2 Plan to a more comprehensive environmental quality plan. P2 Plan updates should focus on identifying opportunities that use P2 to meet compliance requirements and to lower overall life-cycle costs. In P2 Plan updates, activities should document existing or completed P2 projects and programs, identify and assess additional P2 opportunities, and establish a Plan of Actions and Milestones (POA&M) to implement those P2 opportunities. A methodology that can be used in conducting this assessment is described in Section 3 of this guidance document.

Installation P2 Plans must be reviewed annually and updated every 3 years.

2.3 POLLUTION PREVENTION PROGRAM

The scope and extent of an installation's P2 Program depends on the size of the installation, the number of tenant activities, and the regulatory requirements that must be addressed by the P2 Program. The P2 Program will focus on those processes and changes with the greatest opportunity for reducing releases, eliminating pollution, and meeting or sustaining compliance requirements. P2 Program goals can and should be revised to address additional P2 opportunities and needs.

Installations that exceed the threshold reporting requirements of Section 313 of EPCRA are required to characterize installation processes that release toxic chemicals, evaluate and select opportunities to reduce releases, and implement the selected opportunities for reducing releases. For installations that do not meet the threshold reporting requirements of Section 313 of EPCRA, P2 Program efforts should focus on identifying and reviewing processes close to threshold limits for possible P2 opportunities, providing process-specific improvements for the major pollutant-generating operations at the installation, using P2 to meet compliance requirements, or reducing overall life-cycle costs.

The goals and policies of the installation's P2 Program must be defined prior to preparing or updating the P2 Plan. The scope and priorities of the P2 Program must be clear to managers and staff. For example, if an activity's primary processes are aircraft painting and cleaning, and these processes are the major sources of toxic chemical

releases or pollutants, then those processes are the highest priority when evaluating P2 opportunities. P2 reductions at processes that produce fewer toxic chemicals or other pollutants should be addressed only after major sources have been evaluated.

Prior to development of the P2 Plan Update, the activity should verify that the following are available.

• Activity- or shop-level materials accounting data.
• Activity toxic chemical usage and releases relative to TRI thresholds.
• Status of compliance with all environmental regulations.
• Status of EPCRA reporting efforts, if required.
• Resources necessary for preparing a P2 Plan Update.

Before updating the installation P2 Plan, each activity should ensure that the following elements of the P2 Program have been addressed.

• The installation's P2 Program's goals and scope have been established.
• The extent of previous or ongoing P2 efforts and the availability of data that can be used to develop the P2 Plan Update have been determined.
• The elements affecting preparation of the P2 Plan Update have been determined.

The Navy's EQI also encourages installations to adopt a fundamental environmental strategy called AIMM to SCORE – Assess, Implement, Manage, and Measure to achieve Sustained Compliance and Operational Readiness resulting in Environmental Excellence. In adopting the AIMM concept, activities perform the following tasks.

1. *Assess* P2 opportunities through comprehensive P2 planning and use of existing resources and tools.
2. *Implement* P2 opportunities through the annual Baseline Assessment process, the P2 Equipment Program (PPEP), and the ODS Conversion program.
3. *Manage* materials and wastestreams using programs such as CHRIMP and HSMS.
4. *Measure* success through EPCRA reporting, DOD Measures of Merit, and tracking of wastestream reduction and compliance costs against the goals established in the installation P2 Plan and P2 Plan Update.

The EQI is a series of steps to transition from P2 planning to more comprehensive environmental quality planning. In developing installation P2 Plan updates, activities are encouraged to broaden their focus to integrate sustained compliance through source reduction, reduced toxic releases, and minimum life-cycle cost. Activities are encouraged to use all available P2 resources and tools and to aggressively implement P2 opportunities. In addition, activities should consider the impacts of potential P2 opportunities on regulatory compliance requirements.

2.4 POLLUTION PREVENTION PLAN UPDATE ELEMENTS

Each element of the P2 Plan Update is described below. For Navy-wide consistency, installations are encouraged to prepare the P2 Plan Update using the following format, which embodies the minimum elements required by OPNAVINST 5090.1B. Section 3 provides detailed instructions on evaluating process-specific improvements and on prioritizing the list of P2 opportunities that the activity would like to implement.

2.4.1 P2 Opportunity Action Plan

The P2 Plan Update should begin by presenting a summary of P2 opportunities that are planned for implementation. This summary listing will be referred to as the P2 Opportunity Plan of Action and Milestones (POA&M). The following information should be provided in the POA&M.

• P2 opportunity name
• Process or work center affected and POCs
• Expected P2 benefit. Include potential pollutant reduction for all media and regulatory compliance benefit
• Estimated initial investment cost and expected investment payback period
• Source of funding for implementation
• Estimated completion date for implementation

A sample template for presenting this summary information is shown in Figure 2-1. A Sample P2 Opportunity Action Plan is in Appendix B. Supporting information describing the reasoning and methods used to select the P2 alternatives identified in the POA&M should be included in an appendix to the P2 Plan Update. Guidance for evaluating process-specific P2 opportunities is identified in Section 3 of this guidance document.

For additional guidance on elements to be considered when developing a P2 Opportunity Action Plan, activities should refer to CNO document, *A Guide to the Navy's Environmental Quality Initiative – Using Pollution Prevention to Achieve Environmental Excellence,* in the section titled "Detailed Planning - Developing a POA&M."

2.4.2 Purpose

The P2 Plan Update should state the plan's purpose clearly and should include the following elements.

• Incorporate the Environmental Quality Initiative philosophy (P2 for compliance).
• Identify major processes that use toxic chemicals, generate hazardous wastes, or are sources of other pollutant emissions (i.e., air emissions, wastewater, or solid waste).
• Identify the measures and management procedures that will be used to comply with the requirements of DOD and Navy directives and Federal, State, and local codes, standards, and regulations.
• Establish emission baselines and define pollution reduction goals.
• Develop technically and economically feasible options for pollutant reduction.

2.4.3 Policy

The policy statement presents the installation's commitment to P2 and defines its P2 program. The policy statement should contain a clear statement on responsibility, authority, and accountability, and provide a commitment of resources for pollution prevention. It should be consistent with CNO's policy as stated in OPNAVINST 5090.1B and the guidelines presented in the Navy's Environmental Quality Initiative.

All Navy activities shall strive to meet the multimedia pollution prevention goals provided by the Navy, DOD, Environmental Protection Agency (EPA), and regional control authorities for air and water quality management. In accordance with this policy, Navy personnel and contractors shall fully comply with all Federal, State, local, and DOD standards, directives, instructions, and regulations relating to the use of hazardous materials (HM), the generation and disposition of hazardous waste (HW), and the release of hazardous contaminants to the environment. In complying with those requirements, Navy policy dictates that pollution prevention be used to the maximum extent possible in order to achieve pollutant reductions, meet regulatory compliance requirements, and reduce overall environmental program life cycle costs.

Organization or Work Center Affected	Process ID/Name		P2 Opportunity Investment Cost ($) Annual Savings ($) Payback Period (yrs) Funding Source	P2 Benefit (Media Area Affected and Reduction in lb/yr)			Estimated Completion Date (Comments)
Identify Work Center, Bldg. #	**ID**	**NAME**	*P2 Opportunity Name* *$ Amount* *$ Amount* *Time in years* *e.g., PPEP, Claimant, EPR (#)*	*e.g., Air Emissions, lbs*	*HW, lbs*	*Water, etc.*	*Mo./Yr.*
	Process ID (may be multiple)	*Process Name*		*Compliance Benefit*			

Figure 2-1. Format for listing P2 opportunities planned for implementation.

2.4.4 Applicability and Scope

The P2 Plan Update should list and describe all commands and activities to which the plan applies, including tenant and supporting organizations, and contractors and their personnel. This section of the update should also identify whether the installation is subject to EPCRA Section 313 reporting requirements, define the scope of the P2 Plan Update, and identify any installation-specific issues or requirements having an impact on any media area.

2.4.5 Description of Shore Installation

The update should provide a very brief mission overview and generally describe the installation and its tenants. Where applicable, an EPA identification (ID) number and site identification code (SIC) for the facility should be included. The following information should also be included.

- **Mission Statement** – Derived from the general mission statement of the installation and any possible changes resulting from mission realignment, regionalization, or other factors.
- **Geographic Designator** – The geographic location of the installation, including distance from the nearest communities, natural resources, etc. Discuss any environmentally sensitive issues specific to the installation that may have a bearing on the P2 Plan Update, such as being in a nonattainment area, etc.
- **Nature of Operations and Activities** – Generic overview and general description of the operations and processes that are performed by each major activity at the installation.

Additional information on the effects of mission changes to the installation's environmental program can be found in CNO document, *A Guide to the Navy's Environmental Quality Initiative – Using Pollution Prevention to Achieve Environmental Excellence*, in the section titled "Analyzing Future Impacts."

2.4.6 Management and Administrative Elements

The P2 Plan Update should include details on management of the installation's P2 Program and on any relevant management changes. An organizational chart should identify the individuals responsible for current P2 practices and for compliance with environmental regulations. Specific areas that need to be addressed include the following.

• **Roles and Responsibilities -** Identify the organizational structure that assigns the tasks required to implement the P2 Plan; to measure progress; to track the POA&M; and to establish the delegation of authority, responsibility, and accountability for preparing and implementing the P2 Plan.
• **Provisions for Updating the Plan -** Describe the procedures, responsibilities and milestones for updating and refining opportunities identified in the P2 Plan.
• **Provisions for Measuring and Reporting Progress -** Describe the methods used to measure progress in meeting P2 goals, tracking results, and reporting results of the P2 Plan. Specific reporting requirements are provided in OPNAVINST 5090.1B.
• **Hazardous Material Management Procedures -** If the Consolidated Hazardous Material Reutilization and Inventory Management Program (CHRIMP) is already in place, the system should be described. Also describe tracking systems, such as the Hazardous Substance Management System (HSMS), that have been established. If hazardous material control and management systems have not been implemented, include a strategy for implementing a tracking system.
• **P2 Training and Awareness -** Define the training required to ensure that all levels of personnel can perform the appropriate functions.

The P2 Plan Update should also include documentation of P2 practices already established at the installation. Information to be provided will include the following.

• P2 opportunity name
• Process or work center affected
• Current pollution reductions achieved for all media
• Implementation cost
• Annual cost savings realized

A sample format for documenting this information is shown in Figure 2-2. An example template for listing completed P2 opportunities is shown in Appendix C.

2.4.7 Priorities

The P2 Plan Update should include a discussion of the installation's priorities for implementing the administrative, managerial, and process-specific reduction opportunities that are required to meet the P2 program goals. Again, this section should be very brief – with detailed information on project priorities contained in the P2 Plan

Update appendices. Prioritization methods are identified in Section 3 of this guidance document.

2.4.8 Other Requirements

The P2 Plan Update should describe any related P2 requirements and relevant items that have a bearing on the plan. The installation P2 Plan Update is intended to supplement other environmental management plans that have been prepared for the activity. When updating the P2 Plan, these environmental management plans should be reviewed for media-specific requirements, issues, or accomplishments. A listing of media-specific plans is shown in Appendix D.

2.4.9 Commanding Officer's Certification of Accuracy and Completeness

The ultimate responsibility for preparing, coordinating, approving, and implementing an installation's P2 Plan Update is vested in the Commander or Commanding Officer of the host installation, which includes the installation's tenant activities that are located on the same base or in the same geographic area. For example, at a large naval station, the host installation may prepare a P2 Plan for the entire installation, including the tenant activities located within the boundaries of the installation. The P2 Plan Update should identify any changes in mission scope since submittal of the original Plan. Tenants are required to support and participate in the P2 actions of the host installation as deemed necessary by the host Commanding Officer.

The Commanding Officer's Certification need not be a separate section in the P2 Plan. The signature of the Commanding Officer or Officer in Charge (OIC) of the host installation may be included in a Foreword to the Plan, or a separate implementing letter of instruction may be attached to the Plan. A sample format for an implementing instruction is shown in Appendix E.

Organization or Work Center Affected	Process ID	P2 Opportunity Name Investment Cost ($) Funding Source	P2 Opportunity Implemented (Media Area Affected and Reduction in lb/yr, if known)	Completion Date (Comments)
Category or Command Designator				
Organization Name and Location	*Process ID (May be multiple)*	*P2 opportunity name* *Amount ($)*	*P2 opportunity description*	*Year Implemented*

Figure 2-2. Format for listing existing installation P2 efforts.

P2 Plan Update Checklist

Installation personnel can use the checklist below when updating their P2 Plans to ensure that all elements have been considered and completed.

P2 Plan Update Preparation Elements
❑ Determine status of installation-wide Consolidated Hazardous Material Reutilization and Inventory Management Program (CHRIMP) implementation.
❑ Determine activity- or shop-level materials usage.
❑ Determine activity toxic chemical usage and releases relative to TRI thresholds.
❑ Determine status of compliance with all environmental regulations.
❑ Determine status of EPCRA reporting efforts, if required.
❑ Determine applicability and scope; identify activities and shops to include in P2 Plan Update.
❑ Identify resources necessary for preparing the P2 Plan Update.
P2 Opportunity Assessment Elements
❑ Establish an installation P2 Team.
❑ Evaluate current and determine additional P2 and Compliance goals.
❑ Develop process data collection methodology.
❑ Collect P2 and compliance data.
❑ Consult P2 opportunity resources.
❑ Use P2 and compliance tools to analyze data.
❑ Identify P2 and compliance targets.
❑ Review and validate candidate P2 opportunities.
❑ Prioritize new P2 opportunities.
❑ Evaluate and select P2 projects.
❑ Implement and track P2 projects.
P2 Plan Update Elements
❑ Include reference to existing installation P2 Plan.
❑ Develop Plan of Action and Milestones for new P2 opportunities.
❑ Develop list of previously completed or ongoing P2 projects.
❑ Update purpose statement, as needed.
❑ Update policy statement, as needed.
❑ Update applicability and scope, as needed.
❑ Update installation description, as needed.
❑ Update management and administrative elements, as needed.
❑ Update references to media-specific plans and other installation-specific requirements.
❑ Obtain Commanding Officer's Certification or Implementing Instruction.

Section

3

PERFORMING POLLUTION PREVENTION OPPORTUNITY ASSESSMENTS

This section provides suggested guidelines for determining what P2 opportunities should be implemented to help meet the P2 goals established by the installation. Figure 3-1 depicts the flow chart of procedures or tasks used and each task is described in this section.

3.1 ESTABLISH A POLLUTION PREVENTION TEAM

Establish a P2 team or task force for the installation. If a contractor is performing the P2 process assessment, include the contractor in meetings or provide copies of the meeting minutes as early in the project as possible. The P2 team should include personnel from the various media compliance areas and the pollution prevention areas within the environmental department. The team should also include other installation and tenant representatives, including operational and production representatives and safety and supply department representatives. The keys to a team approach to P2 are communication and coordination. The importance of P2 and the goals and objectives of the P2 Program must be communicated to all personnel at the installation.

3.2 EVALUATE CURRENT AND DETERMINE ADDITIONAL POLLUTION PREVENTION AND COMPLIANCE GOALS AND BASELINES

The first step in any P2 analysis is defining the scope and setting goals. As discussed in Section 2, P2 goals will vary by installation and may include reductions in toxic chemical releases, hazardous waste generation, costs of compliance, solid waste generation, wastewater generation, storm water releases, and elimination of hazardous air pollutants (HAP) or ozone-depleting substances (ODS). To establish P2 goals, the installation should carefully consider major compliance burdens and problem areas. Review and update the existing goals and metrics, if necessary. The established P2 goals should be included in the P2 Plan.

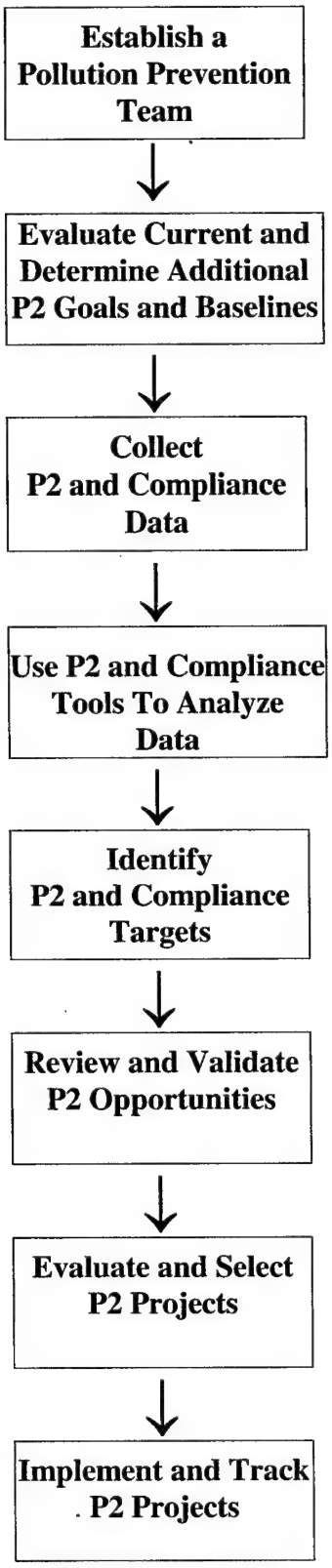


Figure 3-1. Pollution prevention analysis procedures.

Baselines and metrics will help determine if P2 goals are being met. The baseline data should be established at the time the P2 Plan is updated. P2 Plans are updated every 3 years. Baselines are established using data collected during the P2 opportunity assessment survey of the installation.

3.3 COLLECT POLLUTION PREVENTION AND COMPLIANCE DATA

Data will be collected to establish P2 goals in three general areas: (1) processes using hazardous materials and generating pollutants, (2) basewide management, and (3) compliance issues. The purposes of data collection are twofold: to establish an installation's baselines and document major processes that use hazardous/toxic chemicals or generate hazardous waste, wastewater, air emissions or other pollutants; and, to identify areas where pollution can be eliminated or reduced and provide a basis for reporting such elimination or reductions.

Depending upon its P2 goals, the installation may choose to examine only those process sites that use large percentages of hazardous or toxic chemicals or contribute large percentages of hazardous wastes, wastewater, air emissions, or other pollutants of concern. To simplify data collection, activities may defer collecting data on processes that use small quantities of hazardous materials. An example is to defer data collection for processes contributing less than 10 pounds/year or 1 gallon/year. Each installation should set its own individual threshold level depending upon its circumstances.

In addition to determining whether all process sites will be examined, several steps should be completed prior to data collection to ensure a systematic approach is used. These steps include an initial site visit, preliminary process mapping, a detailed review of existing data and documentation, and preparation of a work plan. The purpose of the initial site visit is to familiarize the P2 team with shops and processes that will be examined and to review existing compliance data and documentation. In conducting the initial data collection tasks, existing documentation, such as the installation P2 Plan, Fleet Assistance Support and Technology Transfer (FASTT) team reports and Pollution Prevention Equipment Program (PPEP) equipment requests, should be reviewed. Compliance documentation and data that should be reviewed includes the following.

• Baseline Assessment Memorandum/Program Objective Memorandum (BAM/POM) budget submissions
• Environmental Compliance Evaluation/ Environmental Quality Assessment (ECE/EQA) reports
• P2 Annual Data Summary (ADS)
• Notices of Non-Compliance/Notices of Violation (NON/NOVs)
• Spill Reports
• EPCRA 312 Tier II
• EPCRA 313 TRI report data
• Inventories (such as Clean Air Act (CAA) Title V, EPCRA 311/312, HAZMAT Authorized Use Lists (AULs), CHRIMP, etc.)
• Environmental permits (RCRA, CAA, NPDES, Industrial Pretreatment, Safe Drinking Water Act (SDWA), Stormwater Best Management Practices (BMPs), etc.)
• Media-specific plans (see Appendix D for additional information)

In addition, environmental media managers should be interviewed to identify current compliance issues and areas of concern. More information on obtaining and using compliance data can be found in CNO document, *A Guide to the Navy's Environmental Quality Initiative – Using Pollution Prevention to Achieve Environmental Excellence*, in the section titled "Identifying Environmental Impacts, Compliance Requirements, and P2 Opportunities."

The information gathered during the initial site visit and the data review is included in a work plan. The purpose of the work plan is to detail how the P2 process assessments will be performed, and include a task breakdown and a POA&M.

The procedures for collecting process data are the same regardless of how many or which sites are to be examined. Process-specific data collection can be accomplished through a review of existing process data (such as that contained in the existing P2 Plan, work logs, and procurement or disposal records) and interviews with process operators. The most accurate data will be from the computer programs that track material usage, waste generation, and cost. If data are not available from established tracking systems, then estimates from process operators will be needed. Interviews with process operators should focus on gathering data that, along with personal observations, accurately characterizes and represents each process that uses hazardous materials or produces hazardous wastes, or results in other pollutant or toxic chemical releases.

Worksheets are a helpful tool for collecting process data. They ensure that all necessary data are collected and provide a consistent format for data collection. In general, worksheets designed for data collection should include areas to record basic

process descriptions, types and quantities of process materials used, and types and quantities of wastes generated. (See Appendix F for typical information to be included on data collection worksheets and a sample worksheet.)

A process flow diagram (PFD) should also be sketched during the visit to the process site. PFDs are a graphical depiction of the process that includes process inputs (chemicals, water, labor, equipment and parts) and process outputs (waste, air emissions, wastewater, and finished parts). A sample PFD is shown in Figure 3-2.

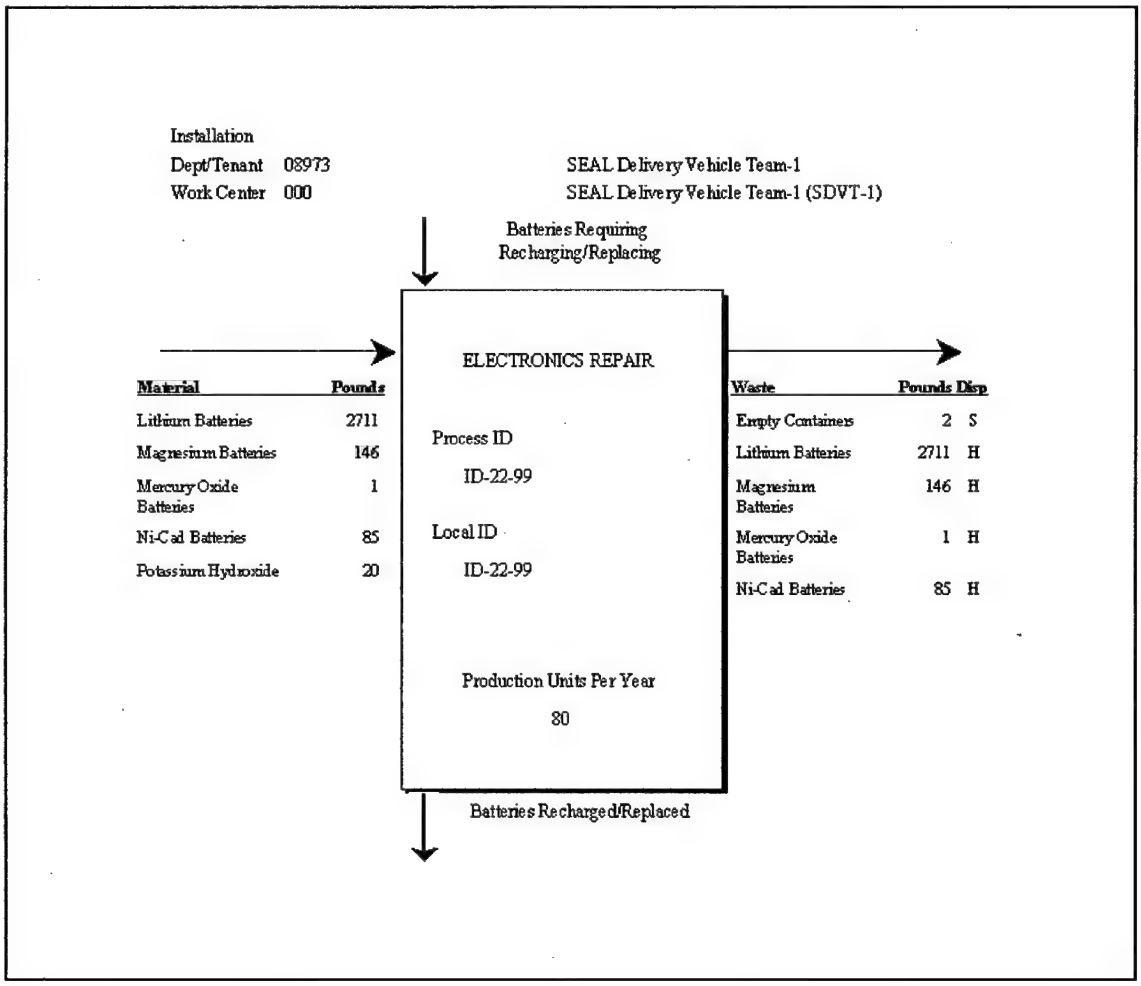


Figure 3-2. Sample process flow diagram.

As part of the P2 Plan Update, process-specific improvements that the installation has already implemented that have reduced the use of toxic chemicals or generation of hazardous waste or toxic releases should be documented. As mentioned in Section 2, the documentation of any existing P2 projects is extremely important in tracking the success of those projects. During the site interview, any P2 initiatives already implemented or planned for implementation should be recorded and listed as shown in Figure 2-2.

3.4 USE POLLUTION PREVENTION AND COMPLIANCE TOOLS TO ANALYZE DATA

The data analysis task, like the data collection task, is dependent on whether a baseline has been established, what the reduction goals are, and whether data were collected for all or just the major processes. In general, data analysis involves the following.

- Converting all process material and waste data to pounds.
- Performing materials accounting for the processes.
- Performing any necessary toxic release calculations.
- Evaluating how process data relates to compliance data.
- Ranking the processes for further evaluation.

The procedure for converting all collected process data to pounds can be accomplished using a database or manual calculations. The material safety data sheets (MSDS) available on the Hazardous Material Information System or from manufacturers for local purchase items can be used to establish material densities. MSDSs also contain hazardous constituent information (usually by percentage weight) that can be used to calculate the weight of toxic chemicals (if any) in each input material. The current list of toxic chemicals can be found at the EPA website (http://www.epa.gov/tri/). If the constituent information on the MSDS is proprietary, it will be necessary to obtain this information from the DOD Hazardous Substance Management System (HSMS) or the manufacturer.

Once the input and output data have been converted to pounds, the process materials accounting is performed. The materials accounting procedure is intended to determine if the inputs to the process equal the outputs from the process (including what was consumed or used up in the process). If significant discrepancies exist between inputs and outputs, an accounting of those discrepancies should be made. Examples of inputs not necessarily accounted for include paint on parts being stripped, dry paint booth filters, and oil filters. An example of an output not accounted for is fugitive emissions.

For installations that use data collection to establish a baseline for TRI reporting or to identify major contributors to toxic releases, a mass balance calculation of toxic chemicals is necessary. The TRI documents listed previously in this section have guidance for calculating toxic releases.

One of the purposes of prioritizing the process sites is to establish which of the processes are the major contributors to the established baseline and to weight them accordingly. Prioritization techniques vary, but at a minimum, the technique used should account for the following.

• Compliance burden
• Hazardous material usage
• Hazardous waste generation
• Air emissions
• Wastewater generation
• ODS usage
• Toxic chemical usage/release
• Worker's safety and health issues

The choice and weight of factors used will depend on the level of data collected and P2 goals, and unique local factors. For example, if the installation is in an air non-attainment zone, then the air emissions would be given a higher ranking weight factor. The compliance burden should include the anticipated cost of complying with existing and anticipated regulations such as permitting and training. The worker's safety and health issues factor should take into account the number of personnel exposed to hazardous substances, risk of hazardous materials spills, level of personal protective equipment required, and other issues that may affect the workers' safety and health.

3.5 IDENTIFY POLLUTION PREVENTION AND COMPLIANCE TARGETS

P2 and compliance targets of opportunity need to be identified from the analyzed data. The targets should be chosen for their ability to meet the P2 goals. The targets should be ranked on their impact and ability to meet the desired P2 goals. Some questions that may be asked when ranking P2 and compliance targets include the following.

• Which waste streams cost the most to manage?
• Which wastes are generated in the largest quantities?
• How are wastes managed?
• Which waste streams pose the greatest long-term liability to the Navy?
• Which waste streams are "one-time" only, not continuous?
• Which waste streams appear to be increasing?
• Which waste streams appear to be decreasing?

3.6 REVIEW AND VALIDATE POLLUTION PREVENTION OPPORTUNITIES

P2 opportunities will be identified for the set of P2 and compliance targets determined from the data analysis task. Potential opportunities can be identified using the resources listed below and the site-specific information. Through this identification process, a list of viable P2 opportunities for each process site should be produced.

P2 Opportunity Resources

P2 Resource	Location
Joint Service P2 Technical Library	http://enviro.nfesc.navy.mil/p2library
P2 Equipment Book	http://www.lakehurst.navy.mil/P2/index.htm
Navy Environmental Quality Initiative Toolbox	http://toolbox.nfesc.navy.mil/
Navy Environmental Quality Fact Sheets	http://enviro.nfesc.navy.mil/ps/eqifs/index.html
A Guide to the Navy's Environmental Quality Initiative – Using Pollution Prevention to Achieve Environmental Excellence	Web site not available at time of printing. The Guide will be available through the Navy Environmental Quality Initiative Toolbox at http://toolbox.nfesc.navy.mil/
Environmental Security Technology Certification Program (ESTCP)	http://www.estcp.org
Joint Group on Pollution Prevention (JG-PP)	http://www.jgapp.com
Navy Environmental Leadership Program (NELP)	http://www.nelp.navy.mil
National Defense Center for Environmental Excellence	http://www.ndcee.ctc.com/
Defense Logistics Agency (DLA) Environmental Products Catalog	http://www.dscr.dla.mil/products/epa/eppcat.htm
Defense Environmental Network and Information Exchange (DENIX)	http://www.denix.osd.mil/denix/denix.html
EPA Enviroene	http://es.epa.gov/index.html

Information collected on each P2 opportunity should include the following .

- P2 opportunity name
- Specific shop process affected
- Descriptive narrative of the P2 opportunity
- Summary of the significant pollutant streams from each media
- Safety and health effects
- Implementation issues (required approvals, site preparation requirements, permits, impacts to operators, etc.)
- Technical points of contact for the P2 opportunity
- Submission requirements for funding under the appropriate program

Sample worksheets for collection of P2 opportunity data is located in Appendix F.

3.7 EVALUATE AND SELECT POLLUTION PREVENTION PROJECTS

Evaluate identified P2 opportunities for their ability to meet mission and environmental requirements at a minimum life-cycle cost. P2 opportunities should be technically feasible to be considered. No further research or development should be necessary for the installation to implement the P2 opportunity. Technologies that require further research and development should be brought to the attention of the major claimant for potential development. P2 options should be evaluated for their effects on the mission, economics, and environment. The weighting of each ranking factor will depend on the installation's individual circumstances.

The basic question that needs to be answered is, "Will the opportunity work in this specific application and achieve the mission goals?" To answer this question, the following issues should be addressed with the process owners: effects on product quality; effects on the time it takes to perform the operation; requirements for military specification changes; and evidence that the opportunity has worked in similar applications. If a determination is made that the opportunity is appropriate for the mission, it should be evaluated for economic and environmental effects. Some opportunities may need to be tested in order to determine feasibility.

The economic feasibility of a P2 opportunity consists of a life-cycle cost analysis that considers the compliance impact, capital costs, implementation costs, and operating costs. For information on performing life-cycle economic analyses, refer to Naval Facilities Engineering Command (NAVFAC) Pamphlet P-442, "Economic Analysis Handbook" October 1993.

The environmental benefits of the P2 opportunity with regard to each media also need to be considered. Some benefits (such as reduced air emissions) will be realized in the life-cycle cost analysis. The P2 opportunity may fulfill a compliance requirement that is currently not being met. Other environmental benefits whose cost savings cannot be

quantified (such as improved safety, reduction of spill risk or improved stormwater control), should be taken into account.

Rank the process-specific opportunities in the final step before prioritizing and selecting P2 initiatives for implementation. The ranking of P2 opportunities combines the results of the technical feasibility evaluation and the economic analysis, potential for pollutant reductions, improved mission capability or product quality, increased worker's safety and health, and reduced compliance burden. Include the final list of ranked opportunities in the P2 Plan Update. The relative weighting of each ranking factor depends on the installation's unique circumstances. The following criteria should be considered as ranking factors.

• Ability to meet pollution prevention targets
• Compliance burden reduction
• P2 opportunity type (source reduction, recycling, or treatment/disposal)
• Ease of implementation
• Payback period using a life-cycle cost analysis
• ODS reduction
• Toxic chemical reduction
• Pollutant reduction in each media area (hazardous waste, solid waste, wastewater and air emissions)
• Ability to meet or exceed mission requirements
• Increased worker's safety and health

If a contractor or outside organization is creating the P2 Plan Update, the contractor or organization should consult the installation personnel before finalizing the rankings. The acceptance of the rankings and P2 opportunities by the installation is an implicit agreement to attempt to implement the P2 opportunities. P2 opportunities that the installation does not deem acceptable or important should not be selected. However, to save future effort a list of P2 alternatives considered but not selected for detailed evaluation should be included in an appendix to the P2 Plan Update. These alternatives can be reevaluated during the annual P2 Plan review process or when drafting subsequent Plan updates.

A summary of the selected P2 opportunities should be presented in the P2 Opportunity Action Plan as described in Section 2.2.1 of this guidance document. The action plan summarizes information on the P2 opportunities selected, including the estimated implementation completion date. Additional guidance on creating a Plan of Action and Milestones can be found in CNO document, *A Guide to the Navy's Environmental Quality Initiative – Using Pollution Prevention to Achieve Environmental Excellence* in the section titled "Detailed Planning."

3.8 IMPLEMENT AND TRACK POLLUTION PREVENTION PROJECTS

P2 projects will be initiated to implement the P2 opportunities identified by the installation. Plans and schedules for implementing P2 projects should be detailed in the P2 Opportunity POA&M. Once implemented, it is important to track pollutant reductions and other benefits of the P2 project. This documents progress toward accomplishing the P2 and compliance goals defined in the P2 Plan, helps ensure the success of installation P2 projects, and helps gain command-wide support for additional P2 projects. At a minimum, pollutant reductions and regulatory compliance benefits resulting from the P2 project should be quantified and documented. Implementation costs, operational costs or costs avoided, and lessons learned from implementing the P2 project should also be documented. This P2 project data should be maintained as part of the P2 Plan annual review.

Additional guidance on establishing metrics for installation P2 projects can be found in CNO document, *A Guide to the Navy's Environmental Quality Initiative – Using Pollution Prevention to Achieve Environmental Excellence*, in the section titled "Developing Metrics – Select Metrics."

APPENDIX A

SAMPLE P2 PLAN UPDATE ADMINISTRATIVE ELEMENTS

This appendix presents portions of a P2 Plan Update for a generic Naval Station. These pages may be used as an example of the format and content to be followed when preparing installation P2 Plan updates. Note that Section 1 of the Plan Update is presented in Appendix C of the document and that none of the Plan Update appendices are included.

POLLUTION PREVENTION PLAN UPDATE
NAVAL STATION, ANYWHERE

Prepared by:

Naval Facilities Engineering Service Center
1100 23rd Street
Port Hueneme, California 93043-4370

May 1999

EXECUTIVE SUMMARY

This Pollution Prevention (P2) Plan provides an update to the previous P2 Plans for Naval Station (NAVSTA), Anywhere, dated June of 1996, and for Naval Submarine Base, Anywhere, dated November of 1995. This update provides the following information:

- New P2 opportunities identified for implementation
- Administrative P2 Plan element changes
- Progress towards meeting previously established P2 goals
- NAVSTA Anywhere and tenant activities CY 1998 shop process information
- P2 opportunity documentation

Section 1, P2 Opportunity Action Plan, summarizes in a table all the new P2 opportunities identified. The information lists the work centers and locations where new P2 equipment or measures should be employed, the processes they will be used for, the economics involved, including cost and funding sources, the reduction in pollution (lb/yr), and estimated dates of completion.

Section 2, Administrative P2 Plan Elements, briefly covers the major P2 Plan elements required for all P2 Plans. In particular, the P2 Plan Update for NAVSTA Anywhere focuses on documenting changes made since the last P2 Plans were written as well as progress made towards reaching P2 goals.

Appendix A (not included), Work Center Process Information, lists work centers, processes, HM usage data, and HW generation data. A database was created using Microsoft Access to store NAVSTA Anywhere and tenant activity shop process information gathered during the P2 Plan Update survey. The data is presented in the form of a process flow diagram (PFD) and a process summary report. This database will greatly improve NAVSTA's ability to update and track progress towards reaching their P2 goals.

Appendices B through F (not included) each contain detailed information about specific P2 opportunities identified for implementation. The information provided includes a brief summary of what and where the measure will be used, pollutant reductions, disposal reduction, an economic analysis, and supporting documentation.

TABLE OF CONTENTS

APPENDICES (not included in this document)

SECTION 2.0
ADMISTRATIVE P2 PLAN ELEMENTS

2.1 Purpose

This document represents the P2 Plan for Naval Station (NAVSTA) Anywhere as required by OPNAVINST 5090.1B. The primary purpose of P2 is to prevent pollution at its source. Specifically, this plan:

- Sets the policy for P2 at the installation.
- Identifies the actions, measures, and procedures used to meet EO 13148, DOD, and Navy directives.
- Identifies the major processes or activities which use and/or release toxic chemicals, toxic pollutants, hazardous materials (HM) and hazardous wastes (HW).
- Develops technically feasible opportunities for reducing the generation of toxic chemicals and/or HM and HW.

2.2 Policy

Naval Station Anywhere and its tenant commands shall take action to prevent pollution by reducing HM use and decreasing the release of pollutants into the environment to the minimum amounts achievable. This shall be accomplished by fully implementing the methods and procedures contained in the Pollution Prevention (P2) Plan and P2 Plan Updates, and complying with the policies contained in OPNAVINST 5090.1B. Actions to implement this plan shall be incorporated into routine technical, administrative, management, and all other ongoing functions and procedures at all organizational levels.

2.3 Applicability and Scope

Installations such as NAVSTA which do not fulfill the EPCRA TRI reporting conditions do not need to meet the rigorous requirements of TRI reporting; however, they will be required to prepare a P2 Plan in accordance with OPNAVINST 5090.1B. As part of the P2 Plan, clear reduction goals are presented and mechanisms for meeting the goals will be outlined. The activities considered in the development of this P2 Plan Update were:

- Commanding Officer, NAVSTA Anywhere, Departments; and
- Tenant Commands, including SDVT-1, NAVSUBTRACEN, NEX, MDSU-1 and ATG.

2.4 Description of Installation

NAVSTA Anywhere began as the Receiving Ship at _____ in 1912. In 1937, it was transferred to a small barge near Naval Submarine Base (SUBASE) Anywhere, where it remained until 1940, when it was renamed the Receiving Station and moved to its present headquarters. In 1955, NAVSTA Anywhere was established, absorbing the functions of the Receiving Station.

NAVSTA includes the main base areas and outlying facilities. The outlying areas include: (list any outlying facilities here).

The main base includes ship berthing facilities at the Mike and Bravo Docks; the core area with Barracks and community support facilities; and NAVSTA Service Craft area (located at Bravo Docks).

2.4.1 NAVSTA Anywhere Mission

The mission of NAVSTA is to provide, as appropriate, logistic support to the operating forces of the Navy and for dependent activities and other commands as assigned. This mission involves operational control of the harbor, along with the maintenance and operation of shore-based support facilities for afloat units and most of the shore activities in the Anywhere area.

2.4.2 NAVSTA Departments

NAVSTA is a shore activity in fully operational status headed by the Commanding Officer. NAVSTA's major claimant is Commander in Chief, U.S. _____Fleet. NAVSTA, for the purpose of this plan, is considered the real property record holder for several Class I real estate properties within the Anywhere area, and is responsible not only for meeting the mission of the installation, but also for meeting EPCRA reporting requirements and preparing this P2 Plan.

NAVSTA performs the following functions:

- Personnel Berthing
- Personnel Support
- Fire Fighting
- Base Security
- Harbor Operations Control

NAVSTA is responsible for receiving, storing, controlling, distributing, and accounting for food, fuel, and consumable supplies necessary to support shore activities and Fleet units. Additionally, the Navy Public Works Center (PWC) is responsible for managing all facilities and utilities at the Anywhere Naval complex. However, PWC activities are not included within the scope of this P2 Plan. The NAVSTA command, while being responsible for all harbor operations at Anywhere, is only responsible for the following departments with regard to P2 Planning:

Department	**Code**
Commanding Officer	OO
Naval Brig/CCU	OOB
Federal Fire Department	OOG
Family Service Center	OOH
Transient Personnel Unit	OOT
Special/Staff Assistants	01-07
Management Services Department	10-15
Staff Civil Engineering Department	20-23
Operations Department	30-37
Supply Department	40-42
Billeting Division	43-44
Security Department	80-86
Morale, Welfare, and Recreation	90-97

The departments listed above that were found to contain activities that used or released toxic chemicals or pollutants, and that were not administrative, include the following:

Service Craft, Code 32: Located both at _____ area and _____, this department is responsible for maintenance of the small craft used to support the movement of ships within NAVSTA Anywhere. Their operations include a machine and welding shop, an engine repair shop, and a riggers shop located at the _____area. A small boat repair and maintenance shop exists on _____for repair of fiberglass-hulled boats.

Water Transportation, Code 33: Located on _____, this department is responsible for maintenance of the vessels used to transport personnel and visitors between the mainland portions of NAVSTA and _____.

Morale, Welfare and Recreation (MWR), Code 90: Located in numerous buildings around NAVSTA, this department is responsible for military and civil services. Those services that use HM or generate waste include the golf course, the general maintenance shop, and the do-it-yourself auto hobby shop.

2.4.3 NAVSTA Tenants

NAVSTA supports several tenant activities, both on and off NAVSTA. The following tenants were found to potentially use or release toxic chemicals or pollutants.

Afloat Training Group (ATG): A Navy command located on _____. This command is responsible for training personnel on equipment used onboard ships and for fire-fighting training.

Commander in Chief, _____ Fleet: While this Navy command is generally responsible for Fleet operations, they are not normally associated with using or releasing toxic chemicals or pollutants; however, a boathouse exists that is used for maintenance of small craft used to transport individuals to privately owned boats. In addition, it was identified through hazardous waste records that this location disposed of waste oils and gasoline.

Mobile Diving and Salvage Unit-One (MDSU-1): This Navy command is located at _____. This unit is responsible for the underwater salvage of Navy equipment. As such, they are responsible for the preventive maintenance on their equipment, and as a result, generate waste requiring disposal.

Naval Submarine Training Center: This SUBASE activity, located on _____, is responsible for firefighting and damage control training of personnel for situations onboard their vessels.

Naval Resale Activity (NEX): This Navy command operates retail and service outlets in various locations around Anywhere. As such, a maintenance shop is located at the _____area for central dispatching of personnel to repair facilities and equipment. Small repair shops also exist within this area for vehicle maintenance and air conditioning and refrigeration repair.

Seal Delivery Vehicle Team-One (SDVT-1): This Navy command is located _____. While this tenant's mission is special forces related, activities exist that require the use of hazardous materials or which may generate wastes. These activities include maintenance of the equipment necessary for them to perform their operations.

2.5 Roles and Responsibilities

This subsection assigns the tasks required to implement this P2 Plan and measure progress.

The *Commanding Officer* shall be responsible for:

- Implementing a facility P2 Program that incorporates the Hazardous Material Control and Management (HMC&M) requirements.
- Committing to reducing pollution from all sources and to all media to meet P2 goals.
- Identifying funding for all projects, which have a payback period of less than 3 years.
- Providing incentives or recognition in the form of monetary or non-monetary rewards or recognition for personnel who have provided outstanding contributions toward reduction of hazardous wastes, toxic chemicals, or solid wastes.
- Limiting open-market purchases of HAZMAT to purchases for which a stock numbered product is unavailable from the supply system and for which there is a valid controlling document (e.g., maintenance requirement card, maintenance requirement plan, technical manual, technical order, maintenance manual, or similar document).
- Establishing and implementing a local shelf-life control and management program.

The *Environmental Division* (Staff Civil Engineering Department) shall:

- Serve as NAVSTA's technical advisor on all issues regarding P2.
- Manage the P2 Program. This includes measuring progress each year for each process or activity identified in the plan, providing training to new personnel as needed to ensure individuals understand their role in preventing pollution, reporting progress, and assisting with implementation of procedures and/or equipment to prevent pollution.
- Conduct oversight inspections of all department, division, and tenant command operations to ensure that P2 policies are implemented.
- Develop projects related to P2, using activity Operations and Maintenance, Navy and Other Procurement, Navy funds or central Environmental Compliance accounts.
- Coordinate and/or manage all updates to the P2 Plan as a result of facility changes.
- Review and update materials in the Authorized Use List (AUL) to ensure all HAZMAT is minimized to the extent practicable in the installation.
- Support the Supply Department in implementing HMC&M requirements. This includes support to maintain the AUL as well as technical support for

implementation of HAZMAT control and shelf-life management programs.

Environmental Coordinators for each NAVSTA department or division shall:

- Investigate, evaluate, recommend, and track the proper handling and reduction of HAZMAT in accordance with the P2 Program and requirements for safety.
- Perform other appropriate actions relative to P2 Program implementation and management including the purchase, installation, and operation of any new equipment used to prevent pollution.
- Inform and/or instruct individuals within respective departments of their roles or responsibilities for preventing pollution.

The *Safety Manager* shall:

- Provide HAZMAT and HW safety and health guidance to NAVSTA departments and serve as technical advisor to the installation regarding personnel health and safety in HAZMAT and HW management and personal protective equipment (PPE) items used by spill response personnel and individuals handling HAZMAT/HW.
- Assist with implementation of P2 opportunities within operating areas with regard to safety-related matters, such as product toxicity and physical characteristics or general safety hazards that may be present while working with new equipment.

The *Supply Officer* shall:

- Monitor procurement of HAZMAT to ensure that all requisitions have been approved as being authorized for use at NAVSTA by the requesting department/division.
- Assist in managing an effective shelf-life extension and expiration program.
- Maintain records and inventories of all HAZMAT purchased, received, and issued.

The *Comptroller* shall:

- Coordinate funding and establish appropriate job orders.
- Maintain financial records of installation disposal funds and handling services.
- Plan, program, and budget for routine, recurring environmental compliance costs related to the management of HAZMAT and HW.

The *NAVSTA Personnel* shall:

- Comply with policies and activities identified in this Plan.
- Review work practices to identify potential changes in operations, methods, procedures, or materials that may be used to reduce the volume of pollutants generated.
- Implement HW minimization processes and procedures.

The *Tenant Commands* shall:

- Designate an Environmental Coordinator who will be the command's point of contact on matters involving HM/HW reduction. Due to the complex regulations and the importance of this position, these individuals should be assigned to this function for no less than six months and be a minimum rank of E-6 for military personnel or GS-7 for civilians.
- Cooperate with NAVSTA Staff Civil on implementation of this P2 Plan.

2.6 Provisions for Updating the Plan

The Staff Civil Engineer will see to it that the P2 Plan is reviewed on at least an annual basis to accurately reflect changes made at the base that would affect the P2 program. The plan should be revised whenever there are significant changes such as:

- New regulations that impact the P2 Program,
- Organizational changes that impact the P2 Program,
- Changes to shop operations that impact the P2 Program,
- Addition or closure of shops,
- Identification of new P2 technologies that may benefit NAVSTA.

This P2 Plan shall be updated every 3 years. Updating the plan will involve reviewing work practices to identify changes in operations, methods, procedures, or materials to reduce the volume of HW generated.

In addition, NAVSTA will review the P2 Plan annually with respect to the status of implementation and progress toward reaching P2 Plan goals.

2.6.1 Organizational Changes

NAVSTA Activities

Naval Submarine Base (SUBASE) Anywhere's P2 Program has been consolidated with NAVSTA to be covered under NAVSTA Anywhere's P2 Plan.

Tenant Activities

With the recent consolidation, three tenant activities are no longer included in NAVSTA's P2 Plan Update. The following tenants were not included as part of this P2 Plan Update:

- Transportation Group
- Auto Vehicle Maintenance
- Naval Intermediate Maintenance Facility (NAVIMFAC)

2.6.2 Administrative Changes

Hazardous Materials Management

NAVSTA Anywhere began implementing the Consolidated Hazardous Material Reutilization and Inventory Management Program (CHRIMP) in 1995. CHRIMP is accomplished by using the HAZMAT facility operated by the Fleet Industrial Supply Center (FISC) Anywhere. The facility centrally issues all types of HM used throughout Anywhere and accepts unused portions for reissue at no cost. Currently all NAVSTA

work centers utilize the FISC HAZMAT facility for all of their HM needs with the exception of the Federal Fire Department and Self Help. These two organizations are scheduled for implementation in FY 1999. NAVSTA tenant commands do not use the HAZMAT facility. Implementation at the tenants is scheduled to begin in FY 1999.

FISC uses the Hazardous Substance Management System (HSMS) computer tracking system to manage and track HM usage throughout the Anywhere Naval Complex. HSMS has been in use since March 1998. Data from HSMS was used to identify HM usage for NAVSTA work centers in this plan. The hazardous waste (HW) management portion of HSMS is not used at Anywhere (this is common in HSMS systems throughout the Navy). A separate computer tracking method is used for HW. A newer version of HSMS (Version 2.3) will reportedly include the proper HW functionality for usage at Anywhere and will be considered for implementation in 1999. Operational characteristics of the CHRIMP/HAZMAT program are as follows:

- HM can be obtained by walking into the FISC HAZMAT facility or it can be delivered to the work center.
- In general, a 2-week supply of any HM will be issued to the user. The empty container or any unused material must be returned by that time. A limited number of materials that are consumed at a slow rate are allowed to remain "in use" at the work center for longer periods of time.
- FISC Anywhere purchases all of the HM issued by the center. Commands that use the center (including NAVSTA) transfer funds to FISC at the beginning of each fiscal year to cover these costs.
- The costs charged to each command are based on the amount of new material issued to them. Material that is reissued (i.e., a partially full container was returned to the center and then reissued) is free to the users' command.
- NAVSTA supports the FISC HAZMAT center by providing five enlisted military personnel to partially staff the operation.
- Based on data collected to date, issues of "reissue" HM items outnumber issues of "new" HM items approximately 2 to 1. This demonstrates that NAVSTA work centers are contributing to P2 by helping to ensure that excess HM is not generated.

The following actions concerning hazardous materials management are recommended:

- Implement the CHRIMP at the remaining NAVSTA work centers (Federal Fire Department and Self Help).
- Work with tenant commands to implement the CHRIMP.
- Work with FISC and PWC to implement the hazardous waste portion of HSMS. By using the full functionality of HSMS, NAVSTA will have access to a powerful array of data concerning its operations. This will provide true "cradle to grave" tracking of hazardous materials, and will provide the accurate data needed to effectively implement pollution prevention.

- Processes that are exempt from EPCRA reporting should be coded as such in the FISC HSMS system. This will simplify EPCRA reporting throughout the Anywhere Naval Complex.
- Work center names and organizational codes need to be updated in the HSMS system. Various reorganizations and the regionalization effort have changed many of the work centers.

2.7 Provisions for Measuring and Reporting Progress

In conjunction with the Self Environmental Compliance Evaluation (ECE), the Staff Civil Engineer shall report progress in achieving P2 goals to the Commanding Officer, NAVSTA, each year. This report shall include:

- Identification of HW and SW quantities generated at NAVSTA;
- Progress in meeting P2 goals contained in the Plan;
- Status of ongoing P2 efforts;
- Future resource requirements needed to achieve P2 goals; and
- Changes recommended to the P2 Plan.

P2 Plan Database

P2 Plan baseline goals were established in May of 1995. But, for all practical purposes, data for determining baselines were not shop specific and/or were non-existent at that time. Good faith estimates were made to fulfill requirements in previous P2 Plan efforts, but it is still difficult to measure, for comparison purposes, something that is not being tracked.

For this reason, efforts are being made to link HM and toxic chemical usage information generated from CHRIMP data with HW disposal records through a P2 database. The P2 database attempts to link HM usage with HW generation through specific processes. Once completed, this database will enable NAVSTA to accurately track progress toward reaching its P2 goals as well as to update the P2 Plan with minimal effort. For each activity and work center that uses HM and generates HW, appropriate processes had to be identified. For each process identified, HM and HW information were gathered and stored in the database. The database was constructed to allow the user to store and manipulate data to get the desired information. As with any new database, it must be populated with the appropriate data. At this time, work center process information has been stored. Process summary reports are located in Appendix A. Data from MSDSs are currently being stored in the database. The P2 database will enable NAVSTA Anywhere to track P2 goals and efforts with a greater degree of ease and confidence.

APPENDIX B

SAMPLE P2 OPPORTUNITY ACTION PLAN

This appendix contains a sample P2 opportunity action plan (i.e., Table 2.1 which has been populated with actual P2 alternatives) that installations may use as an example in preparing their P2 Plans or Plan Updates.

The example is from Section 1 of a Draft Pollution Prevention Plan Update being prepared by personnel from the Naval Facilities Engineering Service Center (NFESC), Code 422.

SECTION 1.0
P2 OPPORTUNITY ACTION PLAN

Table 1-1, P2 Opportunity Action Plan, briefly summarizes newly identified P2 technologies that NAVSTA should consider implementing. Table 1-1 lists the work centers and locations where new P2 equipment or measures should be used, the process it will be used for, the economics involved, including cost and funding sources, the reduction in pollution (lb/yr), and estimated dates of completion.

More detailed information about these technologies and individual shop analyses are located in the appendices (not included in guidance document Appendix C).

Table 1-1 P2 Opportunity Action Plan

ORGANIZATION WORK CENTER BLDG # Opportunity #	PROCESS ID		P2 OPPORTUNITY INVESTMENT COST ($) ANNUAL SAVINGS ($) PAYBACK PERIOD (YRS) FUNDING SOURCE	POLLUTANT/MEDIA REDUCTIONS (lb/yr) APPLICABLE/AFFECTS COMPLIANCE MEDIA (See Notes at End of the Table)						ESTIMATED COMPLETE DATE (Comments)
	ID	NAME		ODS	TRI	AIR	HW	SW	WW	
SIMA 31A Model Inside Machine Shop Bldg. 1488 Opportunity #1	ID-23-00	PMS on Shop Equipment	-Machine Coolant Recycler $9,300 $4,465 2.00 years CTC				5,280 (A)			October 2001 See Appendix F
SIMA 31B Engraving Shop Bldg. 1488 Opportunity #2	SR-12-99	Photo Engraving	-Laser Engraving $25,100 $10,894 3.23 years SIMA		2.4 (B)		2,013 (A)			October 2001 See Appendix G
SIMA 31C Engine Shop Bldg. 1488 Opportunity #3	ID-01-14	Abrasive Blasting	-Glove Box with Plastic Media $12,100 $3,360 3.17 years SIMA				150 (A)			October 2001 See Appendix H Assuming current Glove Box has no recycling capabilities.
SIMA 31D Valve Shop Bldg. 1488 Opportunity #4	ID-01-14	Abrasive Blasting	-Glove Box with Plastic Media $12,100 $4,915 2.37 years SIMA				720 (A)			October 2001 See Appendix H Assuming current Glove Box has no recycling capabilities.

Table 1-1 P2 Opportunity Action Plan (Continued)

ORGANIZATION WORK CENTER BLDG # Opportunity #	PROCESS ID		P2 OPPORTUNITY INVESTMENT COST ($) ANNUAL SAVINGS ($) PAYBACK PERIOD (YRS) FUNDING SOURCE	POLLUTANT/MEDIA REDUCTIONS (lb/yr) APPLICABLE/AFFECTS COMPLIANCE MEDIA (See Notes at End of the Table)						ESTIMATED COMPLETE DATE (Comments)
	ID	NAME		ODS	TRI	AIR	HW	SW	WW	
SIMA 31G Pump Shop Bldg. 1488 Opportunity #5	ID-01-06	Abrasive Blasting	-Glove Box with Plastic Media $12,100 $2,775 4.24 years SIMA				120 (A)			October 2001 See Appendix H Assuming current Glove Box has no recycling capabilities.
SIMA 31G Pump Shop Bldg. 1488 Opportunity #6	ID-02-07	Degreasing	-Inland Technology Parts Washer $2,300 $1,198 1.64 years SIMA				(C)			October 2001 See Appendix I Eliminate Safety-Kleen tank.
SIMA 38B Ordnance Repair Bldg. 1488 Opportunity #7	ID-02-07	Degreasing	-Inland Technology Parts Washer Filters $0 $499 0 years SIMA				(100)			October 2000 See Appendix I Additional filters allow better cleaning efficiency.
SIMA 41A/B Boiler Repair Bldg. 1488 Opportunity #8	ID-01-02	Abrasive Blasting	-Glove Box with Plastic Media $12,100 $2,135 5.55 years SIMA				60 (A)			October 2001 See Appendix H Assuming no recycling capabilities.

Table 1-1 P2 Opportunity Action Plan (Continued)

ORGANIZATION WORK CENTER BLDG # Opportunity #	PROCESS ID		P2 OPPORTUNITY INVESTMENT COST ($) ANNUAL SAVINGS ($) PAYBACK PERIOD (YRS) FUNDING SOURCE	POLLUTANT/MEDIA REDUCTIONS (lb/yr) APPLICABLE/AFFECTS COMPLIANCE MEDIA (See Notes at End of the Table)						ESTIMATED COMPLETE DATE (Comments)
	ID	NAME		ODS	TRI	AIR	HW	SW	WW	
SIMA 41A/B Boiler Repair Bldg. 1488 Opportunity #9	ID-02-03	Acid Cleaning Descaling	-Study Neutralization Process for Acid Cleaning Descaling $0 $20,749 0 years SIMA				13,800 (A)			October 2000
SIMA 51A Inside Electrical Bldg. 1488 Opportunity #10	ID-01-06	Abrasive Blasting	-Glove Box with Plastic Media $12,100 $4,051 2.88 years SIMA				1,080 (A)			October 2001 See Appendix H Assuming no recycling capabilities.
SIMA 51A Inside Electrical Bldg. 1488 Opportunity #11	ID-05-07	Spray Painting	-High Volume Low Pressure Paint System. $2,045 $3,880 0.00 years SIMA		85 (B)	96 (D) (E) (F)	31 (A)			October 2001 See Appendix J
SIMA 51E Battery Shop Bldg. 1488 Opportunity #12	ID-23-00	Battery Maintenance	-Gel-Type or Absorbed Glass Mat Batteries $400 $371 1.03 years SIMA		77 (B)		10 (A)			October 2002 See Appendix K
SIMA 56B AC&R Bldg. 1488 Opportunity #13	ID-02-07	Degreasing	-Inland Technology Parts Washer $2,300 $2,137 1.03 years SIMA				(C)			October 2002 See Appendix I Replace Safety-Kleen tank. #Recycled instead of HW.

Table 1-1 P2 Opportunity Action Plan (Continued)

ORGANIZATION WORK CENTER BLDG # Opportunity #	PROCESS ID		P2 OPPORTUNITY INVESTMENT COST ($) ANNUAL SAVINGS ($) PAYBACK PERIOD (YRS) FUNDING SOURCE	POLLUTANT/MEDIA REDUCTIONS (lb/yr) APPLICABLE/AFFECTS COMPLIANCE MEDIA (See Notes at End of the Table)						ESTIMATED COMPLETE DATE (Comments)
	ID	NAME		ODS	TRI	AIR	HW	SW	WW	
SIMA 64A Carpenter Shop Bldg. 1488 Opportunity #14	ID-20-13	Wood Finishing	-Procure Water-Base Varnish $0 $222 0 years SIMA			270 (D) (E) (F)				October 2001 See Appendix L
SIMA 67E Fire Control Shop Bldg. 1488 Opportunity #15	ID-01-06	Abrasive Blasting	-Glove Box with Plastic Media $12,100 $3,303 3.55 years SIMA				300 (A)			October 2002 See Appendix H
SIMA 67E (Model) Fire Control Shop Bldg. 1488 Opportunity #16	ID-05-04	Painting/ Powder Coat	-Electrostatic Spray Gun for Conductive Components $4,273 $3,260 1.26 CTC		112 (B)	480 (D) (E) (F)				October 2001 See Appendix M
SIMA 67H Antenna Repair Bldg. 1488 Opportunity #17	ID-01-06	Abrasive Blasting	-Glove Box with Plastic Media $12,100 $4,971 2.34 years SIMA				540 (A)			October 2002 See Appendix H
SIMA 67H (Model) Antenna Repair Bldg. 1488 Opportunity #18	ID-05-05	Painting	-Electrostatic Spray Gun for Whip Antennas $9,000 $1,919 4.5 years CTC		105 (B)	240 (D) (E) (F)	210 (A)			October 2001 See Appendix N
SIMA 68C Life Boat Repair Bldg. 1488 Opportunity #19	ID-23-04	Motor Repair	-Hazmat Locker $25,100 $3,374 7.34 years SIMA							October 2002 See Appendix O
							(G)			

Table 1-1 P2 Opportunity Action Plan (Continued)

ORGANIZATION WORK CENTER BLDG # Opportunity #	PROCESS ID		P2 OPPORTUNITY INVESTMENT COST ($) ANNUAL SAVINGS ($) PAYBACK PERIOD (YRS) FUNDING SOURCE	POLLUTANT/MEDIA REDUCTIONS (lb/yr) APPLICABLE/AFFECTS COMPLIANCE MEDIA (See Notes at End of the Table)						ESTIMATED COMPLETE DATE (Comments)
	ID	NAME		ODS	TRI	AIR	HW	SW	WW	
SIMA 68C Life Boat Repair Bldg. 1488 Opportunity #20	ID-23-99	Life Boat Repair	-Stenciling Machine $8,350 $1,426 5.73 years SIMA		2 (B)	1 (D) (E) (F)	4 (A)			October 2001 See Appendix P
SIMA 71A/B Paint/Sand Blast Bldg. 1488 Opportunity #21	ID-05-01	Painting	-Paint Gun Washer $1,245 $5,242 0 years SIMA			96 (D) (E) (F)	1,000 (A)			October 2001 See Appendix Q
SIMA 71A/B Paint/Sand Blast Bldg. 1488 Opportunity #22	ID-05-04	Powder Coating	-Install Powder Coating Booth $2,500 $6,770 0 years SIMA		60 (B)	1,280 (D) (E) (F)				October 2002 Present. Needs to be installed
SIMA 71A/B (Model) Paint/Sand Blast Bldg. 1488 Opportunity #23	ID-05-04	Powder Coating (Spray Nozzle)	-Castle Spray Tip Nozzle for Nordson Spray Gun $50 $4,802 0.00 CTC		12 (B)					October 2001 See Appendix R Nozzle provides better application efficiency.
SIMA 71A/B (Model) Paint/Sand Blast Bldg. 1488 Opportunity #24	ID-05-04	Powder Coating (Temperature)	-Thermometer for Powder Cure Oven, Portable, Non-Contact $300 $2,817 0.00 year CTC				84 (A)			October 2001 See Appendix S

Table 1-1 P2 Opportunity Action Plan (Continued)

ORGANIZATION WORK CENTER BLDG # Opportunity #	PROCESS ID		P2 OPPORTUNITY INVESTMENT COST ($) ANNUAL SAVINGS ($) PAYBACK PERIOD (YRS) FUNDING SOURCE	POLLUTANT/MEDIA REDUCTIONS (lb/yr) APPLICABLE/AFFECTS COMPLIANCE MEDIA (See Notes at End of the Table)						ESTIMATED COMPLETE DATE (Comments)
	ID	NAME		ODS	TRI	AIR	HW	SW	WW	
SIMA 71A/B (Model) Paint/Sand Blast Bldg. 1488 Opportunity #25	ID-05-04	Painting/Spray Gun	-Electrostatic Spray Gun for Conductive Components $4,273 $7,366 0 year CTC		1,148 (B)	1,143 (D) (E) (F)	419 (A)			October 2001 See Appendix M
SIMA (Model) Bldg. 1488 Opportunity #26	ID-05-04	Painting/Paint Gun Cleaner	-Paint Gun Cleaner $11,785 $7,269 1.56 year CTC			38 (D) (E) (F)	1,273 (A)			October 2001 See Appendix T
SIMA (Model) Bldg. 1488 Opportunity #27	ID-05-04	Painting/(Paint Can Crusher/ Recycler)	-Paint Can Crusher/Recycler $9,799 $7,827 1.20 year CTC			97 (D) (E) (F)	2,400 (A)			October 2001 See Appendix U
AIMD 400 Power Plants Division Bldg. 1553 Opportunity #28	ID-02-14	De-Painting	-Non-Methylene Chloride Based Paint Remover $0 $299 0 years AIMD		20 (B)		0			January 2001 See Appendix V
AIMD 400 Power Plants Division Bldg. 1553 Opportunity #29	ID-05-07	Painting	-Stenciling Machine $8,350 $5,939 1.35 years AIMD		6 (B)		440 (A)			October 2001 See Appendix W

Table 1-1 P2 Opportunity Action Plan (Continued)

ORGANIZATION WORK CENTER BLDG # Opportunity #	PROCESS ID		P2 OPPORTUNITY INVESTMENT COST ($) ANNUAL SAVINGS ($) PAYBACK PERIOD (YRS) FUNDING SOURCE	POLLUTANT/MEDIA REDUCTIONS (lb/yr) APPLICABLE/AFFECTS COMPLIANCE MEDIA (See Notes at End of the Table)						ESTIMATED COMPLETE DATE (Comments)
	ID	NAME		ODS	TRI	AIR	HW	SW	WW	
AIMD 500 Air Frames Division Bldg. 1553 Opportunity #30	ID-02-07	Degreasing	-Inland Technology Parts Washer $2,300 $7,193 0 years AIMD				1,600 (A)			October 2002 See Appendix I
AIMD 500 Air Frames Division Bldg. 1553 Opportunity #31	ID-05-01	Painting	-Paint Gun washer $1,245 $230 5.29 years AIMD		17 (B)	40 (D) (E) (F)				October 2001 See Appendix Q
AIMD 500 Air Frames Division Bldg. 1553 Opportunity #32	ID-10-00	Machining	-Extend Life of Coolant $0 $2,728 0 years AIMD		4 (B)		293 (A)			January 2001
AIMD 500 Air Frames Division Bldg. 1553 Opportunity #33	ID-23-01	Hydraulic Testing	-Hydraulic Fluid Purifier $10,853 $6,033 1.73 years AIMD				1,875 (A)			October 2001 See Appendix W
AIMD 900 Ground Support Equipment Bldg. 1553 Opportunity #34	ID-02-07	Degreasing	-Inland Technology Parts Washer $2300 7,298 0 years AIMD				314 (A)			October 2002 See Appendix I

Table 1-1 P2 Opportunity Action Plan (Continued)

ORGANIZATION WORK CENTER BLDG # Opportunity #	PROCESS ID		P2 OPPORTUNITY INVESTMENT COST ($) ANNUAL SAVINGS ($) PAYBACK PERIOD (YRS) FUNDING SOURCE	POLLUTANT/MEDIA REDUCTIONS (lb/yr) APPLICABLE/AFFECTS COMPLIANCE MEDIA (See Notes at End of the Table)						ESTIMATED COMPLETE DATE (Comments)
	ID	NAME		ODS	TRI	AIR	HW	SW	WW	
AIMD 900 Ground Support Equipment Bldg. 1553 Opportunity #35	ID-03-99	Equipment Washing	-Water Recycling System $35,500 $72 10 years AIMD						180000 (H)	October 2003 See Appendix X
AIMD 900 Ground Support Equipment Bldg. 1553 Opportunity #36	ID-05-01	Painting	-Stenciling Machine $8,350 $3,117 2.58 years AIMD		62 (B)	56 (D) (E) (F)				October 2001 See Appendix P
AIMD 900 Ground Support Equipment Bldg. 1553 Opportunity #37	ID-23-99	GSE Repair	-Oil Testing Program to Extend Life of Oil $0 $17,365 0 years AIMD					(G)		January 2001 Reduces generation rate but all waste oil is recycled.
AIMD 900 Ground Support Equipment Bldg. 1553 Opportunity #38	ID-23-99	GSE Repair	-Hydraulic Fluid Purifier $8,479 1,904 4.33 years AIMD		405 (B)			(G)		October 2001 See Appendix W Reduces generation rate but all waste oil is recycled.
CBU Alpha Company Bldg. 1986 Opportunity #39	ID-05-07	Painting	-Stenciling Machine $8,350 $3,660 2.20 years Activity Operating Funds		30 (B)	60 (D) (E) (F)	1,002 (A)			October 2001 See Appendix P

Table 1-1 P2 Opportunity Action Plan (Continued)

ORGANIZATION WORK CENTER BLDG # Opportunity #	PROCESS ID		P2 OPPORTUNITY INVESTMENT COST ($) ANNUAL SAVINGS ($) PAYBACK PERIOD (YRS) FUNDING SOURCE	POLLUTANT/MEDIA REDUCTIONS (lb/yr) APPLICABLE/AFFECTS COMPLIANCE MEDIA (See Notes at End of the Table)						ESTIMATED COMPLETE DATE (Comments)
	ID	NAME		ODS	TRI	AIR	HW	SW	WW	
CBU Alpha Company Bldg. 1986 Opportunity #40	SR-02-99	Fluid Changeouts	-Oil Testing Program to Extend Life of Oil $0 $4,328 0 years Activity Operating Funds				700 (A)	 (G)		January 2001 Reduces generation rate but all waste oil is recycled.
GEMD 437 Bldg. 437 Opportunity #41	ID-02-06	Degreasing	-Mini Max $11,115 $19 10 years Activity Operating Funds		0.1 (B)	26 (D) (E) (F)				October 2001 See Appendix Y
HSL40 12-C Corrosion Control Bldg 1552 Opportunity #42	ML-02-00	Painting	-Paint Gun Washer $1,245 $3,296 0 years Activity Operating Funds		178 (B)	540 (D) (E) (F)	15 (A)			October 2001 See Appendix Q
HSL40 120 Air Frames Bldg 1552 Opportunity #43	ML-02-00	Patch Test	-Particle Counter $7,596 $12,082 0 years Activity Operating Funds		0.3 (B)		654 (A)			October 2001 See Appendix Z
HSL40 310 Line Division Bldg 1552 Opportunity #44	ML-02-00	Helicopter Servicing	-Close Loop Wash Rack $60,500 $487 10 years Activity Operating Funds						901,292 (H)	October 2003 See Appendix X

Table 1-1 P2 Opportunity Action Plan (Continued)

ORGANIZATION WORK CENTER BLDG # Opportunity #	PROCESS ID		P2 OPPORTUNITY INVESTMENT COST ($) ANNUAL SAVINGS ($) PAYBACK PERIOD (YRS) FUNDING SOURCE	POLLUTANT/MEDIA REDUCTIONS (lb/yr) APPLICABLE/AFFECTS COMPLIANCE MEDIA (See Notes at End of the Table)						ESTIMATED COMPLETE DATE (Comments)
	ID	NAME		ODS	TRI	AIR	HW	SW	WW	
HSL48 AD-110 Power Plants Bldg 1552 Opportunity #45	ML-02-00	Fluid Sampling and Change out	-Particle Counter $7,596 $4,074 1.79 years Activity Operating Funds				654 (A)			October 2001 See Appendix Z
MWR OUTREC Bldg. 392 Opportunity #46	ID-05-07	Painting	-Stenciling Machine $8,350 $2,045 3.96 years Activity Operating Funds		24 (B)	40 (D) (E) (F)	76 (A)			October 2001 See Appendix P
MWR VEHMAINT Bldg 349 Opportunity #47	SR-02-99	Fluid Change Out	-Get Glycol Recycler from MWR Auto Hobby Shop $0 $3,136 0 years Activity Operating Funds		1,781 (B)		2,625 (A)			October 2000
OPS Harbor Ops Service Craft Bldg. 290 Opportunity #48	ID-02-07	Degreasing	-Inland Technology Parts Washer $2,300 $1,176 1.88 years Activity Operating Funds				600 (A)			October 2001 See Appendix I
Security SECURITY Bldg 213 Opportunity #49	SR-07-05	Weapons Cleaning	-Mini Max $5,773 $7,066 0 years Activity Operating Funds				188 (A)	1		October 2002 See Appendix Y

Table 1-1 P2 Opportunity Action Plan (Continued)

ORGANIZATION WORK CENTER BLDG # Opportunity #	PROCESS ID		P2 OPPORTUNITY INVESTMENT COST ($) ANNUAL SAVINGS ($) PAYBACK PERIOD (YRS) FUNDING SOURCE	POLLUTANT/MEDIA REDUCTIONS (lb/yr) APPLICABLE/AFFECTS COMPLIANCE MEDIA (See Notes at End of the Table)						ESTIMATED COMPLETE DATE (Comments)
	ID	NAME		ODS	TRI	AIR	HW	SW	WW	
TLINE Transient Line Bldg 424 Opportunity #50	SR-02-00	Arresting Gear Maintenance	-Glycol Recycler $2965 $1,580 1.8 years Activity Operating Funds				1,200 (A)			October 2002 See Appendix AA
Base Wide Opportunity #51	SR-04-00	Building Maintenance	-Non-Hazardous Low Mercury Fluorescent Bulbs $0 $3,351 0 years Activity Operating Funds				4,656 (A)	(4,656)		December 2000 See Appendix BB
Base Wide Opportunity #52	ID-23-00 ID-02-06	Fluid Changeout Parts Cleaning	-Laundering Program for Oily Shop Towels $0 $65,836 0 years Activity Operating Funds				26,034 (A)			October 2001 See Appendix CC

Notes:

(A) Decrease in hazardous waste may help facility meet the requirements of waste minimization under RCRA, 40 CFR 262.41 (a) (6). May also help facilities reduce their generator status and lessen the amount of actions (such as, recordkeeping, reporting, inspections, transportation, accumulation time, emergency prevention and preparedness, emergency response) they are required to comply with under RCRA, 40 CFR 262.

(B) If less hazardous materials are used on site, the possibility is decreased that the facility would meet any of the reporting thresholds of SARA Title III (40 CFR 300, 355,370, and 372; and EO 12856).

(C) Reduction in potential future liability for waste disposal.

(D) May reduce or eliminate local [VOC and/or NOx] requirements in ozone nonattainment and maintenance areas.

(E) May generate emission reduction credits to offset emission increases under New Source Review and Prevention of Significant Deterioration, and if credits meet certain criteria they may qualify for local emission trading/banking programs.

(F) May help reduce or keep facility-wide emissions below applicable major source threshold. Facilities that are not major for any pollutant are not subject to Title V permitting.

(G) Reduction in potential for an uncortrolled release (spill), 40 CFR 112.7

(H) The NPDES requires point source discharges into waters of the United States to be permitted. Recycling technologies may help facilities meet an effluent standard on a NPDES permit. This technology eliminates the chance of a point source discharge violation.

APPENDIX C

P2 OPTION TEMPLATE

This appendix contains a sample listing of existing installation P2 efforts (i.e., Table 2-2 which has been populated with actual P2 alternatives) that installations may use as an example in preparing their P2 Plan Updates. The sample is taken from a Draft P2 Plan Update.

Table 2-2. Completed P2 Opportunities

ORGANIZATION WORK CENTER BLDG#	PROCESS ID		P2 OPPORTUNITY INVESTMENT COST ($) FUNDING SOURCE	P2 OPPORTUNITY IMPEMENTED	COMPLETION DATE (Comments)
Model SIMA 71A/B Paint/Sand Blast Bldg. 1488		Painting	Castle Spray Tip Nozzle for Nordson Spray Gun $50 SIMA		2000
SIMA 06A Tool Room Bldg. 1488	ID-05-02	Painting	HVLP Guns	8 HVLP Guns exists for ships to check out	1999
SIMA 11A Shipfitting Bldg. 1488	ID-23-99	PMS on Shop Equipment	Coolant Recycling (Change Fluid Cycle longer)	PMS cycle already extended.	1999
SIMA 17A Sheetmetal Bldg. 1488	ID-23-00	PMS on Shop Equipment	Hydraulic Fluid Recycler (Change Fluid Cycle longer)	PMS cycle already extended.	1999
SIMA 26A Welding Shop Bldg. 1488	ID-11-00	Welding	Recycle Metal Shavings	Already recycling metal.	1999
SIMA 31A Inside Machine Shop Bldg. 1488	ID-10-00	Machining	Segregate metals and shavings	Already recycling metals.	1999
SIMA 31A Inside Machine Shop Bldg. 1488	ID-23-00	PMS on Shop Equipment	Coolant Recycler (Extend PMS Cycle longer)	PMS cycle already extended.	1999
SIMA Various Shops Bldg. 1488	ID-02-07	Degreasing	Remove Safety-Kleen Tanks and replace with Smart washer	American Bio-Cleaner installed; Smartwashers installed.	1999
SIMA 41A/B Boiler Repair Bldg. 1488	ID-02-07	Degreasing	Eliminate Safety-Kleen tank	Just use the existing Smartwasher.	1999
SIMA 51A Inside Electrical Bldg. 1488	ID-06-01	Varnishing	Eliminate process	Process removed.	1999
SIMA Various Shops Bldg. 1488	ID-05-02	Painting	Get HVLP Guns	HVLP Guns exists.	1999

ORGANIZATION WORK CENTER BLDG#	PROCESS ID		P2 OPPORTUNITY INVESTMENT COST ($) FUNDING SOURCE	P2 OPPORTUNITY IMPEMENTED	COMPLETION DATE (Comments)
SIMA 67E Fire Control Shop Bldg. 1488	ID-02-06	Parts Cleaning	Get Mini Max Steam Cleaner	1- Mini Max exists.	1999
SIMA 71A/B Paint/Sand Blast Bldg 1488	ID-01-03	Abrasive Blasting	Replace and optimize recovery system., Obtain new blast booth	New blast booth already installed.	1999
SIMA 72B Divers Bldg. 1488	ID-23-00	PMS on Shop and Support Equipment	Extend PMS cycle	PMS cycle already extended. 450 is recycled oil.	1999
AIMD Air Frames and GSE Division Bldg. 1553	ID-02-07	Degreasing	Replace Safety-Kleen tank with Breakthrough $3,795 or Smart washer (aqueous parts washer)	Mini Max exists.	1999
AIMD 600 Avionics Division Bldg. 1553	ID-02-07	Degreasing	Solvent Substitution	2-Mini Max exists.	1999
AIMD 900 Ground Support Equipment Bldg. 1553	ID-05-01	Painting	Get HVLP Guns	2 HVLP Guns exists.	1999
CBU Alpha Company Bldg. 1986	ML-01-05	Weapons Cleaning	Get Mini Max $5,773	Obtained Mini Max	1999
HSL40 Bldg. 1552	ID-02-06	Parts Cleaning	Solvent Alternative	1- Mini Max exists	1999
HSL48 DET 8 Detachment 8 Bldg. 1552	ID-02-06	Parts Cleaning	Solvent Alternative	4- Mini Max exists	1999
Weapons Bldg. 190	ID-02-06	Parts Cleaning	Solvent Alternative	2- Mini Max exists	1999
MWR Recycling Center Bldg. 1624	SR-99-99	Recycling	Baler, conveyor, and fluffer	2-Baler and conveyer, fluffer; can blower; trailer; can crusher, wire stripper	1997;1998;1998; 1998;1999

APPENDIX D

OTHER MEDIA-SPECIFIC PLAN REQUIREMENTS

The installation P2 Plan Update is intended to supplement other environmental management plans that have been prepared for the activity. When updating the P2 Plan, the following plans should be reviewed for media-specific requirements, issues or accomplishments. Media-specific plans affecting an installation may include the following:

- **Hazardous Waste Management Plan (HWMP):** At a minimum, this plan addresses how the activity will manage hazardous wastes generated by its operations, including management and administration, collection, waste characterization, generation rates, record keeping, training, and compliance with Federal, State, and Navy hazardous waste regulations.
- **Solid Waste Management Plan (SWMP):** At a minimum, this plan addresses management and administration, collection, waste characterization, generation rates, recycling, composting, incineration, landfilling, plan goals, record keeping, and training. The SWMP describes how the activity will ensure proper management and disposal of its solid wastes and provides the basis for achieving the solid waste reduction goals set by the Pollution Prevention Program (see Section 2).
- **Risk Management Plan (RMP):** This plan provides a summary of an installation's Risk Management Program. Military installations with "processes" that have present more than a threshold quantity of a regulated toxic or flammable substance, as defined in 40 CFR 68 Subpart F, must prepare, submit, and maintain an RMP. EPA defines a "process" as operations that include manufacturing, use, storage, loading, unloading, on-site movement, or any combination of these operations that could be involved in a single accidental release.
- **Ozone-Depleting Substance (ODS) Conversion/Replacement Plan:** This plan must describe the systematic replacement of ODS compounds at the activity. Navy policy for ODS management can be found in OPNAVINST 5090.1B CH-2 Chapter 6.
- **Stormwater Pollution Prevention Plan (SWPPP):** This plan must describe how the installation will manage its stormwater and prevent contamination of the stormwater runoff in the industrial areas of the base. If the activity is an industrial wastewater discharger, it must also comply with the Treatment Plant's Industrial Wastewater Pretreatment Program.
- **Spill Prevention, Control, and Countermeasures (SPCC) Plan:** This plan defines what measures are being taken at oil and hazardous substance areas to prevent spills. An SPCC plan documents spill prevention structures, procedures, and equipment that are already in place, and recommends any additional spill containment structures, procedures, and equipment that should be in place.
- **Integrated Pest Management (IPM) Plan:** The IPM plan includes a description of the related aspects of the pest management program, including the role in mission support; significant health, economic, environmental, and regulatory issues; staffing; and resources. The plan stresses control measures that emphasize an integrated approach to pest control activities that are based on prior and ongoing surveillance.

APPENDIX E

IMPLEMENTING INSTRUCTION

[INSTALLATION NAME]INSTRUCTION 5090.X

From: Commanding Officer

Subj: POLLUTION PREVENTION (P2) PLAN

Ref: (a) OPNAVINST 5090.1B
(b) Executive Order 13148

Encl: (1) Pollution Prevention (P2) Plan

1. Purpose. To establish a Pollution Prevention (P2) Plan as directed by references (a) and (b).

2. Applicability. This instruction is applicable in its entirety to all military and civilian personnel assigned to or working at [Installation Name]. All contractors providing construction or other services at this facility are subject to the provisions of this instruction.

3. Policy. It is the policy of this command to implement P2 to the maximum extent technically possible and economically feasible without compromising the installation's primary national defense mission.

4. Action. All activities or contractors onboard this command shall:

a. Reduce the usage of Hazardous Materials (HMs);

b. Reduce the generation of Hazardous Wastes (HWs) and toxic pollutants requiring treatment or disposal; and

c. Reduce the release of toxic pollutants into the environment.

Distribution:

APPENDIX F

SHOP DATA COLLECTION WORKSHEETS

This appendix contains sample worksheets that installations may use to collect shop-level process information during preparation of P2 Plan updates.

Installation Information

Installation UIC NXXXXX **Name** NAVSTA Anywhere
POC _____
Phone/Fax/email _____

1a. In this section we will capture those costs that affect all processes activity wide.

Category	Type	Cost ($)	Update Frequency
Manual/Plans	Pollution Prevention Plan		
	Solid Waste Management Plan		
	Hazardous Waste Management Plan		
Permits	TSD – RCRA Part B		
	Air Permit		
	Stormwater Permit		
Studies	NPDES Permit		
	Waste stream determinations		
Reporting	Air emission inventory		
Manpower Costs/ Operational Costs	EPCRA		
	Environmental office labor costs		
	Environmental office operation/supplies		
	CHRIMP center labor		

Utility Rates	
Type of Utility	**Cost**
Potable Water ($/Kgal)	
Electricity ($/KWh)	
Air ($/ft3)	

1b. In this section we will capture those costs that affect only a limited number of processes.

Category	Type	Cost ($)	Update Frequency
Manual/ Plans	SPCC Plan		
	Storage Tank Management Plan		
	Storm Water P2 Plan		
	Industrial WW Management Plan		
Permits	Air Permit		
	Tank permits		
Studies	Risk Management plan		
Other	Test back-flow prevention devices		
	Cost of waste stream determinations		

Cost to Process Water	
Type of Utility	**Cost ($/K gal)**
IWWP	
POTW	
NOTW	

Department/Tenant Information

Department/Tenant UIC XXXXX **Name** SIMA

POC LCDR Smith

Phone/Fax/email _____

Hours for department/tenant level personnel participating in environmental committee, working groups, etc.
_____Hours/year

Hours for department/tenant level personnel coordinating environmental inspections and site visits
_____Hours/year

List type and cost of required medical monitoring:		List type and cost of required Safety Inspections / IH Surveys:	
Type	**Cost**	**Type**	**Cost**

Work Center Information

Installation UIC NXXXXX **Department/Tenant UIC** XXXXX

Work Center # 71A/B **Work Center/Shop Name** Paint/Sand Blast **Building #** 100, 101

# of Personnel 11 **Average Grade/Rank** E-6

POC Chief Smith

Phone/Fax/email _____

Hours required for work center level personnel to participate in any EHS inspections per year _____
Hours spent on handling HAZMAT per year _____hours/year

Number of hours per year spent by the shop handing HAZWASTE _____hours/year
Type of special waste stream determinations done each year _____
Cost of special waste stream determinations _____$/year
Hours spent handling and managing recyclable/scrap materials_____ hours/year

List # of personnel and type of required medical monitoring

Type	#of personnel receiving medical monitoring

List # of personnel and type of required training

Type	Hrs.	#of personnel receiving training

Comments Largest generator of waste.

Include description of Work Center mission_____

List Processes performed in this Work Center_____

Process Information

Installation UIC NXXXX **Department/Tenant UIC** XXXXX

WC# 71A/B

Process ID ID-05-01 **Name** Painting

Local ID: ID0214-PNTRMV1; ID0599-PNTEQCLN; ID0206-DEGRWIPE; ID0505-PNTBRSH

Description This shop uses a paint booth to coat parts after being stripped. Paint guns are cleaned manually.

Total Labor Hours per Year 2000

PPE description – what is required, replacement frequency, etc. Supplied air hood, gloves, safety boots, tyvek suits

Permits – type(s), ID number(s), and annual fees _____

_____

Functional Input Parts

Functional Output Parts

Production Units per Year 2500

Process Information (Continued)

List air emissions generated by this process _____
(i.e., VOCs from paint, dust from blasting, etc.)

Estimate volume of water used _____K gal/year
Volume of Wastewater pretreated on site (i.e. oil/water separator) _____K gal
Method of pretreatment_____

Volume of Wastewater Discharged (K gal/year)

IWTP	_____	POTW	_____
FOTW	_____	NOTW	_____
NPDES (stormwater)	_____		

Number of back-flow devices in the process equipment_____

Are there any recommendations by shop personnel?_____

Equipment Information

Installation UIC NXXXXX **Process ID** ID-05-01

Dept/Tenant UIC XXXXX **Local ID** ID0214-PNTRMV1; ID0599-PNTEQCLN ID0206-DEGRWIPE; ID0505-PNTBRSH

WC# 71A/B

Type or Name	Capacity/ Size	Age (yrs)	Expected Life (yrs)	Purchase Price ($)	Annual Maintenance/ Repair Cost ($)
HVLP Paint Guns (2)		2	5	1,000/ea	50 ea
Walk-in Paint Booth, Dry Filter, DeVilbiss	Walk-in	6	25	150,000	450

Note: Please denote an asterisk next to the equipment name for equipment other than Pollution Prevention Equipment.

Material Information

Installation UIC NXXXXX **Process ID** ID-05-01

Dept/Tenant UIC XXXXX **Local ID** ID0214-PNTRMV1; ID0599-PNTEQCLN ID0206-DEGRWIPE; ID0505-PNTBRSH

WC# 71A/B

NSN/ID	Cage/ Manufacturer	Item Name	Annual Usage (Pounds)	MSDS Serial #	Comment
79200114515125	None	Rags	300		Servmart
8010001818080	5W216	Thinner, Aircraft	60	BDGPF	Mayo
8010002422089	5W216	Thinner, Mineral Spirit	60	BHJKS	
8010009652507	OGDS8	Paint Anti-Sweat White	60	BKJSR	
801000N010453	11111	Easypoxy/Platinum Gray	120	BCTTW	
8010012002637	OBBA1	Thinner, Aircraft Coat	400	BNWVJ	
8010013445091	55849	Paint, Enamel, Bulkhead Grey	60	BWTWQ	
8010013445309	55849	Paint, Enamel, Haze Grey	800	BNTXL	
8010013445314	55849	Paint, Enamel, Deck Grey	650	BRNYK	
8010013504727	02388	Paint, Deck Grey	120	BPRRV	
8010013504742	55849	Epoxy Coat Kit A/B Green 150	400	BQYQG	Mayo

Waste Information

Installation UIC NXXXXX **Process ID** ID-05-01

Dept/Tenant UIC XXXXX **Local ID** ID0214-PNTRMV1; ID0599-PNTEQCLN ID0206-DEGRWIPE; ID0505-PNTBRSH

WC# 71A/B

Waste Name	Annual Amount (Quantity & Unit) (Pounds)	Disp *	Waste Stream Code	EPA HazWaste ID#	Cost per Pound	Comment
Filters	150	H	25		0.85	
Paint solvent waste	2000	H	17		0.82	
Paint waste / rags	1500	H	24		1.4	

* A=Air Emission H=Hazardous Waste R=Recycled On-site F=Recycled Off-site S=Solid Waste W=Wastewater

Recommendations

Installation UIC_____ **Process ID** _____

Dept/Tenant UIC_____ **Local ID** _____

WC# _____

Recommendation _____

Description _____

_____

_____

_____

_____

_____

_____

Costs

Direct _____ Indirect _____ Operational _____

Annual Savings _____ Payback Period _____

APPENDIX G

ACRONYMS AND ABBREVIATIONS

ACROMYMS & ABBREVIATIONS

AUL	Authorized User List
CAA	Clean Air Act
CFR	Code of Federal Regulations
CHRIMP	Consolidated Hazardous Material Reutilization and Inventory Management Program
CNO	Chief of Naval Operations
CONUS	Continental United States
CWA	Clean Water Act
CY	Calendar Year
DENIX	Defense Environmental Network and Information Exchange
DESC	Defense Environmental Security Council
DLA	Defense Logistics Agency
DUSD(ES)	Deputy Under Secretary of Defense for Environmental Security
DOD	Department of Defense
DoDR	Department of Defense Regulation
DON	Department of the Navy
ECE	Environmental Compliance Evaluation
EO	Executive Order
EMS	Environmental Management Systems
EPA	Environmental Protection Agency
EPCRA	Emergency Planning and Community Right-to-Know Act
ESH	Environmental Safety and Health
ESTCP	Environmental Security Technology Certification Program
EQI	Environmental Quality Initiative
FASTT	Fleet Assistance Support and Technology Transfer
FY	Fiscal Year
HAP	Hazardous Air Pollutant
HAZMAT	Hazardous Material
HM	Hazardous Material
HMMP	Hazardous Materials Management Program
HMMS	Hazardous Materials Management System
HSMS	Hazardous Substance Management System
HVLP	High Volume, Low Pressure
HW	Hazardous Waste
ID	Identification
IWTP	Industrial Wastewater Treatment Plant
MOM	Measure of Merit
MSDS	Material Safety Data Sheet
NAAQS	National Ambient Air Quality Standards
NAS	Naval Air Station
NAVFAC	Naval Facilities Engineering Command
NAVSTA	Naval Station
NELP	Navy Environmental Leadership Program

NEPA	National Environmental Policy Act
NESHAP	National Emission Standards for Hazardous Air Pollutants
NFESC	Naval Facilities Engineering Service Center, Port Hueneme, CA
NPDES	National Pollutant Discharge Elimination System
NON	Non-Compliance Notice
NOV	Notice of Violation
NSN	National Stock Number
O&M	Operation & Maintenance
ODS	Ozone Depleting Substance
OPNAVINST	Office of the Chief of Naval Operations Instruction
P2	Pollution Prevention
PFD	Process Flow Diagram
PPA	Pollution Prevention Act of 1990
PPEP	Pollution Prevention Equipment Program
POA&M	Plan of Actions and Milestones
RCRA	Resource Conservation and Recovery Act
SIC	Site Identification Code
SIMA	Shore Intermediate Maintenance Activity
SWDA	Solid Waste Disposal Act
TRI	Toxics Release Inventory
VOC	Volatile Organic Compound